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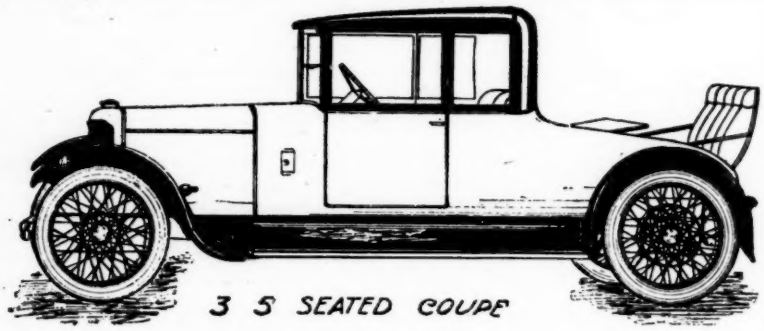

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The Lloyd Roberts Lecture

ON

ATTIC SALT FOR GALL STONES.

Delivered at Manchester, October, 1924,

BY

Sir JOHN BLAND-SUTTON, F.R.C.S.Eng.,

CONSULTING SURGEON TO THE MIDDLESEX HOSPITAL.

A chance observation in natural history by a boy may influence him in a particular line of study. My father, learning that pearls occur in freshwater mussels, led us to collect from the moat a bushel of mussels, and after carefully searching them he found one pearl as big as a grain of mustard seed. This simple experience quickened in me an interest in animal concretions, especially pearls, bezoars, aegagropiles (Fig. 1), and finally gall stones. The museum of the Royal College of Surgeons of England possesses a large collection of animal concretions which was well displayed and admirably catalogued by Thomas Taylor in 1845. It contains among other things:

> Gall stones from women, men, and apes,
> Enteroliths from cows and snakes;
> Vesical stones from cats and dogs,
> And calculi from boys and hogs.
> Oat-hair concretions found in man,
> Bezoars from wild-goat, calf, and ram;
> Ægagropiles of many styles,
> From women, girls, and crocodiles.

Bezoars and enteroliths have an interest for mankind. They form in the alimentary canal of mammals, birds, reptiles, amphibia, and fishes. They are common in goats, calves, and horses, especially millers' horses. A foreign body such as a chip of wood, or metal, a button, nail, or fruit-stone, serves as a nucleus and becomes embedded in hairs which mammals lick from their skins and swallow. In many instances the foreign body is encased in a deposit of triple phosphates which forms a hard stone-ball. The deposit is often arranged in concentric layers. The example represented in Fig. 2, A, is as big as a cricket ball; I have seen one a foot in diameter, and it was used as a door-stop in a museum.

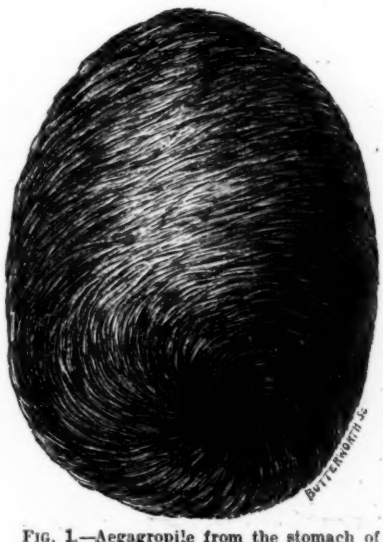

Fig. 1.—Aegagropile from the stomach of a cow. The spiral arrangement of the hair is due to peristaltic movement. (Museum, Royal College of Surgeons.)

Bezoar powder is highly prized as a remedy in many countries. In the *Dispensatory* of the Royal College of Physicians, 1746, will be found an account of a famous remedy known as "pulvis e chelis cancrorum compositus," containing tips of crab's claws, prepared pearls, and red coral. This was converted into "pulvis bezoardicus" by the addition of powder obtained from an Oriental bezoar. This mode of prescribing the powder arose from the fact that bezoar powder, being costly, was sometimes clandestinely omitted. In order to heighten the virtue of the powder it was directed to be made into pellets with the jelly of vipers. It enjoyed great favour for the treatment of epilepsy, jaundice, melancholy, contagious fevers, and worms. The crab's claws powder was commonly called Gascoign's powder, after its inventor.

Faith in Drugs.

Next to belief in the existence of a future place of permanent bliss, nothing is more deeply rooted in the mind of man than faith in drugs. Among uncivilized tribes the medicine-man is of great importance, and the filthy things he prescribes are swallowed by members of the tribe with confidence. In England, in Shakespeare's time, many remedies were of the same nature as those forming the stock in trade of the African medicine-man. Some idea of their nature may be gathered from the list of the ingredients for the hell-broth in the famous cauldron scene in *Macbeth*. In addition to hemlock root, gall of goat, and slips of yew, it contained:

> Eye of newt, and toe of frog,
> Wool of bat, and tongue of dog,
> Adder's fork, and blindworm's sting,
> Lizard's leg, and owlet's wing.

The *Pharmacopoeia* of 1746 had little to boast of in comparison with the odd commodities of a witch's stew. It contained in addition to other curious remedies—

> *Pulvis e chelis cancrorum compositus,*
> *Jus viperinum, vin. viperinum,*
> *Chalybis rubigo preparata,*
> *Pil. saponacea, pulv. bezoardicus.*

There is great virtue in a Latin prescription; it looks like an exorcism (Dean Inge). The above prescriptions, stript of dog-Latin phraseology and writ in witch jargon, run:

> Claws of crabs, and pearls ground fine,
> Viper broth, and viper wine,
> Steel filings, and their dried rust,
> Pills of soap, and bezoar dust.

In 1900 I was much amused when a distinguished Fellow of the Royal College of Physicians recommended me to give a man soap pills with the "intention" to promote the escape of a gall stone, presumably impacted in the common bile duct, instead of removing it by operation. We laugh at the Chinese vendor of quack remedies who sells at a high price scrapings from the fossilized bones of antediluvian monsters which he calls dragon's bones, to be swallowed by rich and poor, forgetful of the fact that some of our most potent remedies are derived from fossilized trees and plants—coal.

Some drugs used to-day, and professionally sanctioned, are remnants of a lingering faith in the medicinal value of animal secretions and concretions. It is true that bezoar powder is no longer prescribed by orthodox physicians, but musk, a secretion from the musk-deer, is recommended as an antispasmodic for hysterical maidens. Ox-gall, as a cure for jaundice, still stands in the druggist's list, in spite of the activity of surgeons in removing obstructions from the common bile duct.

Pearls.

The pearl, an ornament associated in all civilized countries with beauty and riches, is formed on the same principles as a bezoar. The nucleus may be an intestinal parasite, a grain of sand, or a small fish entombed in layers of pearl substance—aragonite—arranged as in a bezoar (Fig. 2, B). The discovery of a parasite as the nucleus of a pearl led Raphael Dubois, in 1901, to describe the pearl as the brilliant sarcophagus of a worm! Pearls were formerly used as remedies; seed pearls were swallowed whole. Scrapings from pearls served as ingredients in an electuary prescribed for its stimulant and restorative properties by Arabian physicians, and the compound powder of crabs claws of the *British Pharmacopoeia* contained prepared pearls and red coral. Human credulity in regard to animal concretions has not spared even ambergris, a fragrant pathological product found in the guts of sperm whales. It was formerly in favour as an aphrodisiac, and is still used in the East by cooks for flavouring dishes, in Italy for spicing wine, and in England for scent, soap, and pomatum.

Gall Stones.

Gall stones were late in attracting attention, not only from naturalists, but also from physicians, pathologists, and, last of all, surgeons. The nature of gall stones was ill understood until the French chemist Chevreul discovered the crystallizable fatty body now known as cholesterol. Chevreul recognized it as the chief constituent of gall

stones, and laid the foundation of our knowledge of biliary concretions. Gall stones are often formed of spheres arranged concentrically around a nucleus, as in pearls and bezoars (Fig. 2, C). The soft brown masses sometimes found in the gall bladder of oxen has been used as drugs by apothecaries and as pigment by artists.

Modern surgery is responsible for a great increase in our knowledge of man's viscera. This is true of the gall bladder. It is established that gall stones are mainly formed in the gall bladder. This receptacle is liable to several forms of infection, and the presence of gall stones in the gall bladder and the associated ducts leads to consequences which not only cause discomfort, inconvenience, and pain, but imperil health and life in various ways. In 1883 I was busy rearranging the specimens in the museum of the Middlesex Hospital, and became deeply interested in an instructive set of specimens, illustrating diseases of the gall bladder and its ducts, collected by Dr. Murchison from the dead-house. Murchison held the post of physician and pathologist to the hospital for ten years. In 1891 my interest was quickened in the clinical aspect of gall stones, for in that year I successfully excised some gall stones from the common duct of a woman of 58. At that date choledochotomy was a novelty. This woman reported herself alive and well ten years later. I followed gall-stone surgery keenly, and in 1907 opened a discussion in the Section of Surgery at the meeting of the British Medical Association at Exeter, on cholecystectomy.* This formed the basis of my monograph on *Gall-stones and Diseases of the Bile-Ducts*. Early in my surgical work I became convinced of the advantage to the patient of removing the gall bladder in preference to draining it, when infected and occupied by concretions; this attitude is supported by recent researches into the mode of formation of gall stones.

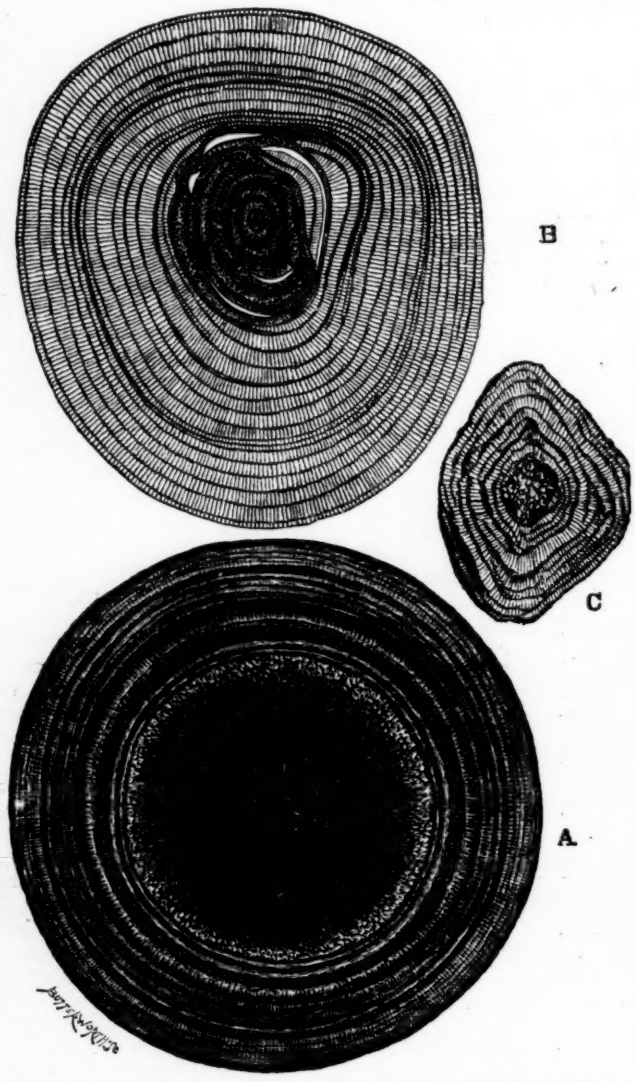

FIG. 2.—A, Bezoar in section. The nucleus consists of twigs. (Natural size.) B, Pearl in section, magnified (Rubbel). C, Gall stone in section. It consists mainly of cholesterol. (Natural size.)

The study of animal concretions throws some light on the physical and chemical processes concerned in their production. Like hailstones, bezoars, and urinary calculi, gall stones are formed around a core, and for a long time it has been accepted by surgeons that this core, or nucleus, may be a clump of shed epithelium, mixed with pigment, crystals of cholesterol, or a cluster of bacteria; infection of the gall bladder is a primary factor in the production of gall stones. During the last twenty years investigations relating to this matter conducted by Aschoff, McNee, and Rovsing, indicate that sepsis is not a common cause of gall stones, but sepsis is a serious sequel of gall stones. Stasis of the bile in the gall bladder, by permitting the separating out of the constituents from the bile, is also an important factor in the production of these concretions. When a gall bladder containing gall stones becomes septic the infection leads to an excess of lime salts in the bile, and these salts coat the stones with mantles of chalk.

These investigations teach that the majority of gall stones arise in the gall bladder. Rovsing believes that the faceted shape of gall stones is not due to the mutual pressure of concretions one upon the other by the spasmodic clutch of the gall bladder. He suggests that the facets are the expression of the intrinsic properties of certain gall stones, just as in the urinary bladder the oxalate stone is spherical while the urate stone is oval. He also suggests that the core of a gall stone is formed of bile pigment. Such views destroy the picturesque simile that a gall stone is the tomb of a clump of bacteria. In spite of the difference of opinion among men who have studied the modes in which gall stones form, this seems clear: temporary bacterial cholecystitis associated with concentration and stagnation of bile is a frequent cause of gall stones. The occurrence of chalk in gall stones is of clinical value; it facilitates the detection of stones in the living body by radiology and simplifies diagnosis in an extraordinary fashion.

CHOLECYSTOTOMY.

In 1879 Lawson Tait deliberately opened a woman's gall bladder and removed a gall stone impacted in the cystic duct. This marked the beginning of gall-stone surgery in Great Britain. He took no further interest in the extension of this class of surgery and was content with the simple method of cholecystotomy; but this simple experience led his acute mind to realize that the best results of gall-stone surgery were obtained in conditions unassociated with jaundice. The removal of the gall bladder seemed to Tait radically absurd, wholly unnecessary, and might have a deleterious influence on the health of the patient.

It soon became clear to other surgeons that there were disadvantages connected with cholecystotomy—the mere draining of the gall bladder through an external opening—because the liver excretes 40 ounces of bile in twenty-four hours. The bile normally drains into the intestine, the fluid part is absorbed, and the colouring matter mingles with the faeces. When bile escapes through a fistula to be collected in a bottle, or caught in cotton-wool or gauze, it is a nuisance. In 1894 a medical student submitted to cholecystotomy for calculous obstruction: the fistula has been discharging mucus and bile to the present time—thirty years. This man clings obstinately to his gall bladder, and has used more than a ton of cotton-wool for absorbing the escaping bile.

Many surgeons have agreed that when a gall bladder contains an apparently solitary calculus it is sufficient to remove the stone. Experience teaches that it is difficult to decide in the course of an operation that the stone is solitary. When gall stones exist in hundreds and the gall bladder resembles a bag containing shot, who can be sure that he has emptied it? The sutures used to secure the edges of the opening in the gall bladder to the margins of the incision in the abdominal wall become encrusted with

* BRITISH MEDICAL JOURNAL, 1907, ii, p. 877.

cholesterol paste and bilirubin calcium; such things are as unpleasant as gall stones. These sequelae are well known. Experience and observation have taught surgeons that the majority of gall stones are formed in the gall bladder, and it is wise to remove this troublesome pocket when it has acquired the habit of moulding gall stones. Surgeons agree in the truth expressed in the epigram, "A gall bladder that has been subjected to a cholecystotomy is a liability rather than an asset." In the early years, when draining a calculous gall bladder was the rule, surgeons sometimes suggested that recurrence of gall stones was an extremely rare event. Few hold this opinion to-day. I have removed the gall bladder from many patients who have been submitted to cholecystotomy by various surgeons, and found gall stones therein. In 1889 Knowsley Thornton removed from the common bile duct of a spinster a large gall stone and one from her gall bladder, which was shrunken and useless. In 1913 I removed from the ampulla of this woman a gall stone, in shape like a blunt cone, with a vertical height of 3 cm. and a circumference at the base of 4 cm. (Fig. 3). The common duct admitted my forefinger easily.

Some of the reasons urged for the retention of the gall bladder are odd. A Canadian surgeon stated that an individual with a gall bladder sleeps better than one who has lost it. Another reason, equally odd, relates to a woman with intestinal obstruction; her gall bladder was opened and she was fed for five days through the cholecystotomy opening, and finally recovered. Once I found the gall bladder useful in a surgical emergency in a man with a perforated duodenal ulcer. The tissues around the hole were so rigid that I could not infold the bowel. In this dilemma I plugged the hole with the gall bladder, secured it in position with a few stitches, and performed a routine gastro-jejunostomy. The man recovered in spite of the insult to his gall bladder. Hamlet reminds Horatio that the toe of the peasant comes so near the heel of the courtier he galls his kibe. Certainly the gall bladder might complain of being put to a base use in these terms:

> Although I hold the bile as in a butt
> It is too mean to use me as a bung
> To plug an opening in a leaking gut.

It is unwise to argue from an isolated experience that a patient should be advised to keep a diseased gall bladder against a similar contingency.

CHOLECYSTECTOMY.

Reflection on the development of surgery in relation to what is called visceral surgery teaches this—nearly all the methods of dealing with what were called encysted dropsies followed nearly the same order. They began with tapping frequently repeated; then incision and drainage, the margins of the artificial openings made in the cyst wall being stitched to the edges of the parietal incision. Since the discovery of anaesthetics and the use of reliable ligatures, complete removal (extirpation) of cysts has been adopted, with comfort and safety to patients. Drainage methods were employed for ovarian cysts, hydatid colonies, hydronephrosis, and dropsical distensions of the gall bladder. No one uses such methods to-day for ovarian cysts or hydronephrotic kidneys, and they are removed with little risk throughout the civilized world.

The operation for removing the gall bladder—cholecystectomy—has passed through a groping stage, then a period of extreme specialization, ending in broad generalization. The first time I met Lister in consultation was over a patient with calculous cholecystitis, and I wished to remove the gall bladder. Lister agreed with the diagnosis, but dissented in regard to operative interference, for these reasons: When the abdomen is opened and nothing big removed it is very difficult to secure the abdominal wound safely. He explained to me that his own experience in this matter had been very sad. I am old enough to have seen the evil results when abdominal incisions failed to unite by primary union, and it is a privilege to have lived to see Listerian principles of wound treatment universally accepted, and abdominal incisions heal as readily as surgical incisions of the face and limbs.

For twenty years I have consistently followed the practice of removing the gall bladder when occupied by gall stones, pus, or infected bile. Many surgeons only remove it when cholecystotomy is impracticable, and many hesitate to remove it in the condition known as acute septic cholecystitis. The best results follow cholecystectomy for septic cholecystitis.

Tanner (1924) analysed 117 consecutive cases of gall stones, operated on in Guy's Hospital, and found that patients submitted to cholecystectomy were half as long in the hospital as those submitted to cholecystotomy. The advantages of cholecystectomy are "even more striking when the patients themselves are seen" in preference to trusting reports.

An important fact in regard to diseases of the gall bladder revealed by modern surgery concerns cancer of this receptacle. Thirty years ago primary cancer of the gall bladder was regarded as a rare disease; few specimens were available for study, and all of them, in pathological museums, were spoils from the dead-house. To-day primary cancer of the gall bladder is known to be a frequent disease and rebellious to surgical treatment; it is often found in gall bladders excised for gall stones, and its presence unsuspected until the parts are examined in the laboratory. Gradually it has been established that in 95 per cent. of cancerous gall bladders, gall stones are also present. It is a fact that gall bladders submitted to cholecystotomy for gall stones and drained temporarily, or permanently, are liable to become cancerous. This is a strong reason for removing the gall bladder when patients suffer from calculous cholecystitis.

VAGARIES OF THE GALL BLADDER.

Some of the abnormal relations of gall bladders give rise to clinical puzzles. The fundus of a gall bladder has been found strangulated in the sac of a right femoral hernia. (Museum, St. Bartholomew's Hospital.) In a sexagenarian spinster, under my observation, the gall bladder containing many calculi could be easily felt through the thin abdominal wall, and the gall stones made to grate together in the course of a clinical examination. A gall bladder may be so mobile that it rotates and twists its narrow neck like a rope. In size a gall bladder with its cystic duct obstructed with a calculus may become so distended with mucus as to reach the pelvis and resemble in clinical characters an ovarian cyst. Lawson Tait began an operation under the impression that he was dealing with an ovarian cyst; his astonishment was great when he discovered it to be a gall bladder converted into a huge mucocele. The cystic duct was obstructed by a solitary gall stone and the gall bladder contained eleven pints of fluid. Distended gall bladders of twice and thrice this capacity have been reported by Collinson and Terrier. A similar experience occurred in my practice; I expected to find a large subserous cystic fibroid, but found a huge calculous and cancerous gall bladder in contact with the fundus of the uterus.

FIG. 3.—Two gall stones (natural size). The larger was removed from the common bile duct of a spinster. The faceted stone was removed from the ampulla of a spinster aged 50, who had shown no signs of jaundice. A fistula existed between the gall bladder and colon. (Museum, Middlesex Hospital.)

When the gall bladder is converted into a mucocele with thin translucent walls its removal is a simple surgical exercise. When it resembles a big red sausage with thick walls, and as tense as the parchment of a well tuned drum, it startles the novice in surgery. In such a condition the stripping of the gall bladder from its bed in the liver is easily accomplished, and with little bleeding, because the hepatic vessels in immediate relation with it are thrombosed; however, the cystic artery in such conditions often bleeds viciously and may delude the surgeon into the idea

that he has cut the hepatic artery. It is worth remembering that the surface of the liver, stripped by the removal of a simple mucocele, will often bleed more freely than after the removal of an infected gall bladder. When the detachment exposes a wide area of the liver, bile sometimes leaks from small bile ducts thus damaged, sometimes so freely for twenty-four hours or more as to raise the suspicion that the ligature has slipped off the cystic duct.

Complications of Cholecystectomy.

An important complication of calculous cholecystitis is fistulous union of the gall bladder and colon due to ulceration and escape of gall stones into the gut. A gall stone which slips into the colon in this way may be as big as a bantam's egg. The museum of St. Mary's Hospital, London, contains a segment of pelvic colon with a gall stone of this size impacted in it, and with fatal consequences. Many stones escape through fistulous openings in the gastro-intestinal tract, to the permanent advantage of the patient. The orifice of escape in such a complication shrinks to a narrow funnel and this occasionally resembles a cord. In dealing with apparently solid cords a ligature should carefully be applied; a narrow channel communicating with the gut may exist in it and be sufficient to set up local sepsis, illustrating the maxim—a small leak neglected may sink a great ship.

Nothing seems more surely established in clinical observation than the idea that complete obstruction of the common bile duct is inevitably followed by jaundice. A spinster, aged 50, complained of a pain in the region of the gall bladder. She was thin and I could feel a gall stone in the position of the common bile duct. There was neither sign nor history of jaundice. I removed a large stone from the common duct which had completely plugged it (Fig. 3). The gall bladder adhered to and communicated freely with the transverse colon. In this woman the bile found its way to the gall bladder by the cystic duct and dribbled through the fistula into the gut, to the patient's temporary advantage. As the removal of the stone reopened the natural outlet for the bile, I removed the gall bladder and closed the hole in the colon. The woman reported herself in good condition ten years afterwards.

The gall bladder is a diverticulum of the hepatic duct. The mere loss of the gall bladder is unattended with sinister consequences. Many mammals and birds lack a gall bladder. Some parrots have a gall bladder and some not. Hamlet, in his soliloquy on the First Player, says:

> But I am pigeon-liver'd and lack gall
> To make oppression bitter.
> Act ii, 2, 605.

This clearly indicates Shakespeare knew that the pigeon lacks a gall bladder. Absence of the gall bladder neither causes inconvenience nor shortens life. In 1905 I removed the gall bladder of a widow, aged 76, for acute calculous cholecystitis. The mucous membrane of the gall bladder was thickly beset with flakes of cholesterol and glistened like the tinselled coat of Harlequin. The patient lives, aged 94, and bids fair to become a centenarian.

Radiography and Gall Stones.

One of the difficulties in persuading patients to submit to operative treatment for suspected gall stones was uncertainty of diagnosis. "Give us a sign" was the imperative and persistent demand. Many physicians preferred to trust soap pills and olive oil, rather than the scalpel. The position has changed. Radiography can secure shadows on photographic plates which indicate not only the presence of gall stones, but their size and shape. With such evidence patients now willingly submit to surgery; and, as a rule, quick healing, freedom from leakage, and from the recurrence of gall stones, with quick restoration to health and usefulness, are the usual consequences of cholecystectomy. *To operate for acute cholecystitis and not remove the gall bladder is as reprehensible as operating for gangrenous appendicitis and leaving the appendix.*

The golden rule for surgeons to observe is this: Examine the main ducts—cystic, common, and hepatic—especially the ampulla, and be satisfied they are free of concretions, remembering always: *An undiscovered concretion in the common duct will wreck a cholecystectomy.* The manifestation may be long delayed, but it will surely come. Although the medicine-man can point to some wonderful cures, and sorcerers can cast out imaginary devils, neither a sorcerer nor a physician can expel gall stones.

A British Medical Association Lecture.

ON

LUMBO-SACRAL BACKACHE.*

BY

P. JENNER VERRALL, F.R.C.S.,

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Lumbo-sacral pain is exceedingly common, very disabling, and often so resistant to treatment that patients will resign themselves to it. Either its treatment devolves on the general practitioner entirely, or the patients, if they can afford it, go from specialist to specialist in search of relief. We have often to deal with a vicious circle involving many systems, but with only one symptom—pain. This pain may be situated in various positions, may or may not be affected by jarring of the spine, standing, or walking, and may be variously described as sharp, gnawing, or aching. It is of the first importance in diagnosis to obtain an accurate account of this symptom from the patient. We may simplify the subject by dividing the possible causes into five groups, three of which, the most serious, will not detain us long, but must be carefully excluded before we consider the other more common causes. We have to deal with a complex system of bones, joints, ligaments, muscles, and nerves, but we may separate the sacro-iliac joints for consideration later.

Severe Bone and Joint Disease.

Caries of the lumbar spine is not uncommon, and it must be remembered that adults are by no means exempt and that caries does not necessarily affect the bodies of the vertebrae, but may affect, though less commonly, the laminae, transverse processes, etc. Diagnosis will be made by consideration of the extreme rigidity, possible deformity and abscess formation, and by the *x*-ray findings. Spinal skiagraphy is by no means easy, and in doubtful cases it is essential to have a skiagram by an expert expertly interpreted. The possibility of gummatous deposits in the spine must not be forgotten; the symptoms resemble those of tuberculous caries, and the two diseases may coexist. Syphilis of the spine is, however, a rarity, and the same may be said of sarcoma; but secondary carcinoma, frequently associated with a mammary tumour (possibly unsuspected), is by no means uncommon. Forewarned is forearmed, and severe localized pain coming on in a patient liable to carcinoma will lead to an adequate *x*-ray examination, when diagnosis is usually easy, as the skiagraphic appearances are generally characteristic. Aneurysm and acute osteomyelitis are, of course, exceedingly rare, but we must not forget them. I do not propose to enter into the treatment of these cases as this would take us too far.

Arthritis of the Lumbar Spine.

Here again the skiagram affords us the only absolutely sure method of diagnosis. Lipping of the edges of the vertebral bodies and osteophytic outgrowths are characteristic. These latter may even go to the extent of complete fusion, producing actual bony ankylosis between the vertebrae. Severe arthritis (spondylitis deformans), with its flat absolutely rigid spine, is fortunately rare, as treatment can achieve little more than the arrest of the disease when it is well advanced, early diagnosis being the only hope. Gonorrhoea is responsible for at least 65 per cent. of such cases. Some surgeons would put the percentage higher, but quite 30 per cent. are due to metastatic infection from

* Delivered before the Winchester Division on April 9th, 1924.

the intestinal tract (dysentery, typhoid, and even *Bacillus coli*), and this quite apart from the acute or subacute spondylitis not uncommon during the later stages of such diseases, and of less serious prognosis if correctly treated. Spondylitis of this type is often associated with iritis, both in the gonococcic variety and in the intestinal; the infective agent in the latter is either the primary organism or, more commonly, a streptococcus which has reached the system through the open intestinal ulcers. Rarely, perhaps in 5 per cent., spondylitis deformans is due to metastases from other septic foci. Milder degrees of arthritis of metastatic origin are common. Moderate rigidity and pain in the lumbar spine combined with intermittent attacks of lumbago are associated with such arthritis. It must not be assumed that every case of lumbago has arthritis, as the affection may be a pure fibrositis; but arthritis is sufficiently frequent to justify a skiagram, which will often reveal either slight lipping of the vertebral bodies or quite as commonly osteophytic outgrowth in some of the interneural joints.

Treatment will follow the usual lines as for arthritis elsewhere. In the acute stage rest is imperative, either on a frame or plaster bed in severe cases, or, in mild cases, simply in bed with the lumbar spine supported by a pillow. Where abnormal curves are in course of development, an attempt should be made to correct these by suitable padding of the bed or frame during the period of recumbency. It would be absurd to condemn every patient suffering from slight spinal arthritis to permanent spinal fixation. Radiant heat, counter-irritation, and ionization may suffice for mild cases. Subacute cases may need firm fixation in a plaster jacket for a time, but in chronic cases where the disease is sufficiently extensive to justify fixation the ordinary Thomas's back brace will meet all requirements, and patients will be so much relieved by wearing it that they will not complain of the necessary fixation of the spine. While carrying out this local treatment a rigorous search must be made for the toxic cause, bacterial or chemical, and the appropriate treatment applied.

Traumatic.

Arthritis is often of traumatic origin, a relatively mild trauma providing a point of diminished resistance to the attack of the circulating toxin, as so frequently occurs in the joints of the extremities. But we may have more severe lesions. A history of violence, direct or indirect, will lead to the necessary investigation. There may be lesions of bone, ligaments, or muscles, or all together, or simply a concussion.

Of the grosser lesions, crush fractures of the vertebral bodies are commoner than is usually thought, and we must not be blinded to the possibility of their occurrence by a history of comparatively slight immediate disability after the accident, as the fracture is impacted and there is relatively little instability. If undiagnosed, such fractures will often yield gradually to the body weight and a deformity will appear with the necessary concomitant symptoms of spinal distortion. In young subjects considerable violence is necessary, and the war provided us with many examples in men who had been blown up and buried under heavy masses of earth; and such accidents occur also in civil life. In older patients, however, far less violence is needed. I have a patient, a lady of 65, who sustained a severe crush fracture of her first lumbar vertebra by stumbling when getting out of bed and falling with her back across a chair. Minor fractures of laminae and articular processes arise not infrequently from indirect or direct violence, often during athletic pursuits. Diagnosis is all-important, and the skiagram should ensure this when there is any doubt.

Treatment in the initial stages is by rest and complete fixation of the spine, and the prognosis is good, firm union usually occurring in three or four months. Subsequent symptoms will be due either to vertebral distortion, if such has been allowed to occur, or to adhesions, either in the joints themselves or round the exits of the spinal nerves. Such adhesions are not always preventable, but much may be done by instituting exercises at the correct moment. It is not easy to judge this moment accurately, but symptoms and the skiagram will, with experience, be sufficient guide. In old-standing cases, where the skiagram shows firm union, it is quite correct treatment to break down adhesions by mobilization and to follow this up with active exercises.

Spondylolisthesis must be mentioned, but is very rare. It may occur either gradually or by sudden violence. The skiagram of such a case shows a dislocation of the lumbar spine on the sacrum, causing a noticeable hollow in the back above the sacrum. The skiagraphic appearance in this case is unmistakable, the antero-posterior view showing the round outline of the vertebral body, and the lateral view (if obtainable) the dislocation forwards. Apart from the well known obstetrical considerations, such cases, if they have symptoms or a progressive deformity, must be treated with a firm back brace with adequate abdominal support.

Sprains of the spine are common, especially in those engaged in athletics. Obviously many structures are involved together, and a more or less accurate diagnosis is obtainable only by a study of the symptoms produced by movement in various directions. It is hardly necessary to add that such movements must be made with extreme care, owing to the pain caused and to the possibility of the injury being more severe than one had imagined. A skiagram should always be taken if circumstances permit. Treatment consists in rest at first, and fixation, either by strapping in mild cases or by plaster in severe ones. When the acute symptoms have passed off, local massage will aid absorption of effusion and expedite repair, and graduated active exercises should be instituted at the earliest date consistent with safety. This latter is essential if adhesions are to be prevented, but in practice is very difficult to control, and it may well happen that adhesions form, and there may be pressure round the exits of spinal nerves with resultant neuralgia. Fortunately we can easily recover the lost ground, when all acute symptoms are passed, by mobilization of the spine followed by exercises.

Mobilization to be effective must be thorough, and the method described by Sir Robert Jones[1] represents the usual practice of orthopaedic surgeons. Nitrous oxide anaesthesia is sufficient for the mobilization of the minor joints, but it does not provide adequate relaxation for the treatment of the shoulder, hip, or spine. A full anaesthetic is given and the knees and hips fully flexed so as to give control of the pelvis. Then, while an assistant steadies the shoulders, the pelvis is held, and the spinal movements of flexion, extension, lateral flexion, and rotation are performed seriatim to the full degree. Mobilization must always be followed by active supervised exercises, commencing on the day following the operation.

I have said that trauma may cause concussion without an organic lesion. I refer to the familiar railway spine of the textbooks. The spine may be held absolutely rigid and the symptoms may be pronounced, but momentary relaxation by subterfuge may often be obtained. Characteristic spots of tenderness to pressure will usually be found on either side of the spine opposite the exits of the spinal nerves, the patient will be evidently neurasthenic and inclined to exaggerate symptoms, and finally the skiagram will be negative. I do not wish to dwell long on this subject; suffice it to say that, when the legal aspect of the matter has been settled, mobilization will have both a moral and physical effect, especially if combined with the application of a cautery (or even simply a scrubbing-brush) to the back, and an assurance of cure. Akin to this is the hysterical spine, characterized by the same tender spots and often a fantastic attitude. I will not presume to encroach on the domain of psychological medicine, except to remind you that such cases are often due to mimicry of a genuinely diseased acquaintance. Whether treated by the orthopaedic surgeon or by the psychologist suggestion is the clue to treatment. The surgeon will combine this with mobilization and the psychologist perhaps with actual hypnotism.

Mechanical.

We now come to the commoner and more important causes. The back is an exceedingly complex structure containing a large number of bones, joints, ligaments, and muscles, whose functions are interdependent.

First, what are the potential movements of the spine? Flexion and extension occur mainly in the lumbar spine[1] and are those movements which mainly concern us at present. Side bending is mainly lumbar in the erect position. In flexion it occurs rather higher and in hyperextension lower. Side bending and rotation are largely combined, rotation, however, being more a dorsal function. It is well to remember that in the flexed spine the dorsal bodies rotate to the convex side of the curve and in the extended spine the lumbar bodies rotate to the concave side, the result being that dorsal rotation is greater and lumbar rotation less than an examination of the spinous processes would lead us to suspect. One must also bear in mind the normal curves of the spine and their method of development. The primitive foetal type is an antero-posterior continuous C curve. The cervical lordosis commences to form soon after birth and the lumbar at about 6 months, the former being complete at about 1 year, and the latter developing more gradually. The maintenance of these acquired curves depends on muscular action, and any lack of muscular tone leads to a tendency to reversion to the foetal type with associated pain, from dragging on ligaments, etc., and from the efforts made to prevent this reversion. This naturally brings us to a consideration of the effect of the muscles in maintaining position. The erect posture is maintained by balance combined with the integrity of the postural contraction of the essential muscles. For a thorough understanding of this postural contraction we are indebted to the researches of Sherrington and to the application of his results to orthopaedic subjects admirably set forth by Bankart.[2] To summarize his conclusions briefly: The contraction of muscles is of two kinds—phasic, concerned with movement, and postural with the maintenance of posture. Those muscles which normally serve to maintain the erect attitude are capable of either of these two functions, and there is reason to believe that the two functions are controlled by separate innervations, that of postural contraction passing through the sympathetic chain.

In normal postural contraction no fatigue is caused, and the muscle has the peculiarly convenient quality of being capable of adapting itself to different lengths without change of tension. Ultimate control comes from the paracerebellar nuclei, which are in intimate connexion with the higher centres and with the semicircular canals.

Although we have seen that fatigue does not normally occur, very slight causes suffice to upset this balance and voluntary muscular action must be called to assist. Neurasthenia, adenoids, eyestrain, and excessive mental work are merely some of the causes of this. You are all familiar with the child who is devoted to books, works hard at homework, and generally gets prizes, but who complains of backache and has a kypholordosis. No exercises will cure such a child; the muscles are not weak, but their control is insufficient and we must treat the cause. Bankart has made the important observation that in such cases the myasthenic reaction is present, which is conclusive proof of the truth of the above. What is true of such a child is true also in older people, and a search for a cause of lack of nerve control, toxic or mechanical, will frequently enable us to cure an obstinate backache. We must also remember that in the aged there is normally an obliteration of the acquired curves and a reversion to foetal type, combined with decreased postural activity from general weakness.

The immediate effect of such lack of adequately balanced muscular control is that the spine is left unsupported, and open to the influence of outside factors. Habitual posture alone will not influence the spine, but when resistance to distortion is absent it will do so. The result may be a scoliosis, quite pliable and easily corrected in the early stages. Diagnosis is easy; inspection of the back will reveal the curve. Pain will be chiefly complained of on the convex side owing to excessive strain on ligaments and to increased voluntary muscular effort and consequent fatigue. There is frequently an actual acute lumbo-sacral angle which produces a concentration of pain in the lumbo-sacral region. This angle is usually obvious, but a skiagram will detect it with greater certainty. The importance of its recognition lies in the necessity for correcting it before correction of the superincumbent spine is attempted. On the other hand, the spine may yield in an antero-posterior direction and cause pain.

No description of these defects would be complete without reference to Goldthwait's types.[1] This very careful and accurate American observer has described two types of person particularly liable to suffer from lumbo-sacral backache, and most people will agree with him. His first type, termed by him the visceroptotic, has a long narrow back, flexible spine, and increased lordosis, with a sharp angle at the lumbo-sacral junction. The effect of this is obviously to produce an increased strain at the sacro-iliac joints, and pain is located there. His second type is the reverse of this—a thick-set body with slight lordosis and little movement of the lumbar spine. Here the strain is thrown on the lumbo-sacral angle.

The abdomen of a quadruped is supported directly from the vertebral column by muscles aided by a certain amount of elastic tissue. The adoption of the erect attitude in man has necessitated a different mechanism, and a lordosis is developed. This serves to balance the body, and at the same time to afford some support to the liver. Nature also anticipates intermittent increases in weight in the human abdomen. The most important of these is that of the gravid uterus, but food in the intestine and increased adipose tissue on the abdominal wall are also provided for. Pregnancy is a normal function, and the various necessary alterations are so marvellously successful that we should expect no ill effects. The savage woman develops increased lordosis and carries on her normal work without complaint; modern civilized woman develops the lordosis, but her overstrained nervous system refuses the postural contraction of the erector spinae, and she must use voluntary effort with consequent fatigue and pain at the lower attachment of the erector spinae. The wearing of a pregnancy belt is the price she pays for civilization. Pregnancy is, after all, a normal function, but overloaded intestines and an abdominal fat pad are not. Actual enteroptosis may be added to this, and the resulting disturbance of the centre of gravity is great. At the same time there is no natural tendency to compensate for this by increased muscle power and tone in the back; on the contrary, there will be toxicity and weakness. At first voluntary effort will be required, with consequent muscle strain, effort, and fatigue. When this fails all the strain will be thrown on the ligaments, with resulting pain from this cause. This is perhaps the commonest cause of lumbo-sacral backache, the pain being felt mainly over the lumbo-sacral attachment of the erector spinae. On the other hand, we may find a diminished lordosis with pain due to perpetual ligamentous strain without adequate muscular support. In those women who are compelled by their social status to undertake heavy domestic duties a common cause of backache is to be found in the low wash-tub and low kitchen sink. Perpetual stooping over these when tired throws an impossible strain on the erector spinae, lordosis diminishes, and backache is constant. The remedy is obvious. At the other end of the social scale, modern fashion has decreed that women shall have no hips, a flat back, no mammary development, and a head bent forward. In scientific language we may describe this as a deliberate reversion to the foetal type of spine with obliteration of the normally acquired curves. As modern life must of necessity throw a large strain on the nervous system of such women, we cannot expect any great degree of postural activity in their muscles. The result is inevitable. When once voluntary action becomes fatigued pain must and does follow, while the necessary subsequent redevelopment of the normal curves is naturally associated with additional pain from ligamentous strain. Against the dictates of fashion the doctor is powerless, but he can do his duty and advise, and even if his advice be neglected for the moment it may be appreciated later on.

Abnormal spinal curves may be due also to outside mechanical causes. A large number of people have one leg shorter than the other. The vast majority of these develop no deformity and no symptoms, but a pelvic tilt must exist, and where symptoms do occur we must notice and correct it by a high boot. Increased lordosis may be associated with genu valgum and flat-foot in which there is internal rotation at the hip and a consequently inclined pelvis.

Similarly in talipes equinus there is pelvic tilting from insufficiency of the posterior structures of the leg. Such deformities will need appropriate correction.

Sacro-iliac Joints.

In England sacro-iliac disability is considered rare, but in America considerable attention is paid to these joints, and, I think, rightly. The characteristic symptoms are, first, pain at the site of the joint, increased by any jar on the limb of the affected side, such as stepping off a step, and a feeling of insecurity, which is easily understood when we remember that the whole weight of the body above this point must be transmitted through these joints. Examination will reveal deep tenderness over the joint (to be distinguished from the superficial tenderness due to referred pain) and pain elicited by lateral compression of the pelvic crests. These signs and symptoms are common in greater or lesser degree to all sacro-iliac troubles. Examination by *x* rays is of doubtful value, as, although gross disease such as tubercle will be readily shown, milder arthritis and relaxation cannot be diagnosed by this means, as no accurate joint line is obtainable in the skiagram owing to the tortuosity of the joint. In tuberculosis, a very serious disease, symptoms will be marked; possibly there will be intra- or extra-pelvic abscess formation, and we shall be unlucky if we fail to see evidence in the skiagram. Metastatic arthritis comparable to similar diseases elsewhere is by no means uncommon and is a source of severe backache; but perhaps the commonest trouble in these joints is relaxation of the ligaments. Jones and Lovett[1] say that such relaxation is uncommon and they have rarely seen it. With all possible deference to such high authority, I think it is quite common. The outstanding cause for this is childbirth. In ruminants these joints are normally relaxed to such an extent before labour that the cowherd can foretell the approximate date of calving from palpation of them. After birth involution takes place in them *pari passu* with that of the uterus. Precisely the same phenomenon occurs in women—with this difference, relaxation is less marked; but woman is a biped and her sacro-iliac joints must stand a relatively greater strain than do those of a quadruped. In such cases there is a tendency for the sacrum to fall forwards and downwards, producing a painful tension on the ligaments. Here prevention by adequate rest after labour is better than cure, but in old-standing cases rest will do much and should be insisted upon, treatment being continued by means of a pelvic brace, or, better, one of those close-fitting elastic corsets reaching well down on the hips that for some reason or other the Parisians are more expert at making than others.

Tuberculosis is fortunately rare, but is of grave prognosis. Definite tubercle will need years of recumbency and fixation, although operation by bone graft has in recent years much improved the prognosis and shortened the period of treatment. Grafting of this joint, as usually practised, is a difficult operation, consisting in the placing of a graft across the affected joint. Frequently in doing this an abscess is opened, and although this is not a contraindication to the operation it is certainly a complication. Acting on the suggestion of my assistant, Mr. Fleming, recently, in cases both of tubercle and of simple metastatic arthritis, I have adopted the plan of placing a long bone graft from the tibia through both posterior superior spines of the ilium, the graft resting on a prepared bed in the sacrum under the erector spinae muscles. Such a graft is easily inserted, requires no additional fixation, and to my mind represents a sound mechanical principle—that of the tie-beam. Weight is transmitted downwards along the vertebral column and is resolved to a certain extent laterally through the sacro-iliacs, the graft having therefore the same effect as do those iron bars with X-shaped pieces at the end that are customarily seen on houses which have become insecure. This procedure will shorten the period of treatment in tuberculous cases, and in others severe enough to need operation causes relief as soon as the graft has united, and (so patients tell me) prevents that feeling of insecurity which is so terrible and which is the cause of the neurasthenia so commonly associated with sacro-iliac weakness.

Sacralization of the Fifth Lumbar Vertebra.

We are again indebted to America for observation of this defect. High authorities[1] tell us that, although it occurs, it is rarely responsible for symptoms. With this I agree, but when it does cause symptoms they are very severe. In a certain number of individuals the fifth lumbar vertebra is fused to the sacrum, giving four lumbar and six sacral vertebrae. This in itself does no harm, and is found out by accident in a skiagram. In some cases, however (sometimes combined with fusion of the bodies and sometimes without), the transverse processes of the fifth lumbar vertebra take on sacral characters and impinge on the ilium, forming a joint. The condition may be very painful; it can be diagnosed only by *x* rays, and a good stereoscopic skiagram is necessary before we can pronounce it certainly present. It may cause no symptoms at all, but if symptoms occur they consist in intractable pain, both local and referred to the area supplied by the fourth lumbar nerve, as the junction between the fourth and fifth lumbar nerves lies immediately anterior to the process. Treatment consists in removal of the process, and the proximity of the nerve junction and the depth of wound necessary if the process is approached directly from the back render the operation difficult. It is far better to approach the process by cutting a window from the iliac crest opposite it, as this serves the double purpose of removing the impinging process and the structure on which it impinges, and is incidentally a relatively easy operation. We will not delay longer with this moderately rare condition; it will suffice if we realize the possibility of its occurrence.

Referred Pain.

I have already referred to the sympathetic system, and we have seen that it is probably the channel of control of the postural activity of the skeletal muscles; Sherrington maintains that the tone of hollow viscera, controlled by the sympathetic, is in reality postural activity. In addition, nutrition is controlled through the vasomotor fibres of the sympathetic. But the sympathetic contains also the sensory nerves of the viscera. The gangliated cord is connected with the spinal nerves by white rami communicantes, which arise from the anterior primary divisions from the second dorsal to the second lumbar nerves, and from the third (sometimes second or fourth) sacral. These rami obtain from the ventral root motor and secretory fibres and from the dorsal root the sensory nerves for the viscera. These fibres are said to occur not only in the white rami, but to be capable of reaching the sympathetic chain by way of the grey rami. By these grey rami the axons of sympathetic cells reach each of the spinal nerves, and it is by them that postural and vasomotor control of the body is maintained. For the purpose of this lecture the upper part of the sympathetic does not concern us.

It is clear that, as the sensory nerves to the viscera are the axons of spinal ganglion cells, pain derived from the viscera may be referred to the somatic area served by these same ganglia, and it is often so. Study of cases combined with a consideration of anatomy will often enable us to diagnose the source of trouble. A few examples will suffice to illustrate this.

The lesser splanchnic nerve from the ninth and tenth dorsal ganglia reaches the solar plexus and thence through the superior mesenteric plexus reaches the intestine as far as the caecum. Pain from this origin may be felt in the lower dorsal and upper lumbar regions, down over the crest of the ilium and in front. The least splanchnic nerve from the last dorsal ganglion reaches the renal plexus, and pain from the kidney may follow the distribution of the twelfth dorsal nerve. Fibres from the first two lumbar nerves pass by the aortic and inferior mesenteric plexuses to the colon, etc., and an overloaded colon, in addition to the backache it may cause by its mechanical weight and by the toxins it may cause to enter the circulation, may also cause backache (both lumbar and in the buttocks) by pain referred along the distribution of these two nerves.

In the sacral region referred pain is common. The upper sacral nerves communicate directly with the pelvic plexuses, and pain is referred from the uterus, bladder, prostate, etc.

This pain is commonly felt over the sacro-iliac joints, but I would again emphasize that it is not a deep pain, and a little practice will easily enable us to discriminate between this and the deep tenderness associated with pain on lateral compression of the pelvis which is characteristic of sacro-iliac disabilities. It would seem that by calling attention to such a multiplicity of possible causes of lumbo-sacral backache I have but added to the difficulties of the subject, but these cases are very trying and often the trouble is of very long duration. By realizing the possible causes we may often by systematic examination and exclusion reach the correct solution at once, or, even if we do not do so, we may appreciate the fact that the pain is due to several of these causes combined in a vicious circle, and we may attack the different parts of that circle seriatim and achieve a cure.

To summarize briefly: in examining a case of lumbo-sacral backache first exclude gross disease, injury, and arthritis, and have a skiagram taken. Then look for outside mechanical causes and outside causes of overstrain of the nervous system. Finally, remember the paramount importance of the sympathetic system and seek for referred pain.

Treatment has been briefly indicated in each case, but the value of mobilization in suitable cases must be remembered, and this valuable therapeutic measure should not be relegated to outsiders.

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ACUTE DIABETES FOLLOWING MUMPS.

BY

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THE occurrence of pancreatitis as a complication in the course of an attack of mumps is well known, and has frequently been described. Farnam[1] in 1922 collected 119 such cases from the literature, and added one of her own, in which laparotomy was performed. She summarizes the case records thus:

"An acute abdominal condition, probably pancreatitis, is sometimes associated with epidemic parotitis. It occurs more often in boys and young men than in other classes of the population; it usually follows, but may precede, the parotitis, or may be the only manifestation of the disease. It is characterized by intense epigastric pain, often vomiting, occasionally diarrhoea or constipation, and a slight rise in temperature. A mass may sometimes be felt in the epigastrium. It usually runs a short benign course, and has not been known to affect the internal secretion of the pancreas."

All these 119 patients, with one exception, recovered. It may be stated that the only cases in which the pancreas has actually been seen at this stage are Farnam's (at operation) and Lemoine and Lapasset's[2] (*post mortem*). In the former case the pancreas was found to be red and tense, with three probable areas of fat necrosis, and the impression gained was one of acute pancreatitis.

Lemoine and Lapasset's case was that of an Algerian soldier who was admitted to hospital with mumps on October 2nd, 1902. The attack was at first simple, but on the tenth day there occurred shivering with high fever, and swelling of the testicle. By the fourteenth day the temperature had fallen to normal, and the patient seemed to be well enough for discharge from hospital. Next day, however, he complained of having slept badly, and had vomited. The temperature was normal, but there was epigastric tenderness and the spleen was palpable. Jaundice and more vomiting followed, and he died on October 18th, after an attack of haematemesis. At the *post-mortem* examination the gall bladder was found to be swollen and oedematous, apparently from pressure by an enlarged gland on the common duct. The pancreas had almost tripled its normal weight (190 grams), and was oedematous and congested, with swelling of the lymph glands round about. Histological examination showed a general increase in size of the acini and epithelial cells, with diminution in size of the islets of Langerhans, through pressure of the swollen ducts.

Although symptoms of pancreatitis are thus relatively common in the course of mumps, glycosuria or diabetes has seldom been described, and Garrod[3] in his Lettsomian lectures (1912) commented on the rarity of glycosuria in this connexion. I have been able to find records of only three cases in the literature, with a doubtful fourth, and I add a brief description of a fifth case, a very acute one, which recently came under my own observation.

1. Harris[4] (1899) describes the case of a farmer, aged 42, who three years previously had had an attack of mumps. A month after recovery from this attack polyuria had set in; thirst, hunger, and loss of weight followed, and these symptoms had continued with gradually increasing severity. When Harris saw him he was emaciated, having lost 30 lb. in weight, and the knee-jerks were absent; 6,440 c.cm. of urine, containing 4.6 per cent. of glucose, were passed in the day.

2. Barbieri[5] (1903) mentions the case of a boy, aged 6, who contracted mumps during an epidemic. Six days after the onset of the symptoms he complained of continuous pain above the umbilicus which radiated round the right side to the right lumbar region. The pain was attributed by the parents to worms, and the child was dosed with calomel and santonin. The abdominal pain continued, and next day there were also vomiting and diarrhoea. After two days of this the boy developed a voracious appetite and great thirst, but everything he ate was vomited an hour later. He drank 2 litres of water in a day. Barbieri was now called to see the patient, and found that he had slight epigastric tenderness, while the faeces under the microscope showed many droplets of fat. The urine had a specific gravity of 1034 and contained sugar; 2,400 c.cm. were passed in twenty-four hours. The symptoms subsided gradually, and after fifteen days had disappeared. By that time the urine was sugar-free, the specific gravity being 1015 and the daily amount no more than 600 c.cm.

3. Gilhespy and Holden[6] (1917) record the case of a lad, aged 16, who in May, 1916, had an attack of mumps, without testicular or abdominal symptoms. On the third or fourth day of this illness the patient became very thirsty, and began to pass a large quantity of urine. When seen in hospital he showed pronounced signs of diabetes mellitus, with sugar and acetone bodies in the urine. Tuberculosis of the lungs also was present, and he died in five months. The authors mention that at the *post-mortem* examination some islets in the tail of the pancreas were found to show hyaline degeneration.

4. The case which I have classed as doubtful was described by Routh[7] in 1912. Here a man, aged 58, on April 13th developed a right-sided parotid swelling which was attributed to a chill experienced five days before. Two superficial ulcers were present on the right side of the tongue. Some pyrexia followed and extension of the swelling to the submaxillary region. By April 28th the swelling was more severe, and incision under an anaesthetic was contemplated. On examination the urine was found to contain sugar and aceto-acetic acid (specific gravity 1038). By May 1st the aceto-acetic acid had disappeared, and on May 2nd the urine was free from sugar. This case would seem not to have been one of mumps, but rather one in which glycosuria was associated with septic parotitis.

I shall now describe a case in which diabetes followed mumps and ran a rapid course to death, the patient coming under my care in the last stage.

5. E. A., a girl aged 8, was admitted to Dundee Royal Infirmary on December 2nd, 1923, in coma. The history was that five weeks previously she had developed mumps, which ran an ordinary course, and in which there had been no complaint of abdominal pain. Two weeks after the attack of mumps came on she began to pass a large quantity of urine, and had to get up sometimes eight times in the course of a night to empty the bladder. She complained of great thirst, and her appetite increased. After a week the polyuria lessened, but the other symptoms continued unabated. There was also pronounced constipation. A few days before her admission to hospital she became confused mentally, and on November 30th she failed to recognize her friends. She went into coma on December 1st, and when brought to hospital on December 2nd was deeply unconscious. A specimen of urine obtained by catheterization showed 8 per cent. of glucose and much aceto-acetic acid, and the breath had a strong smell of acetone. In spite of treatment by insulin she died within thirty-six hours, without recovering consciousness.

It is interesting to note that although abdominal pain is present in the common type of pancreatitis which complicates mumps, it was absent in Gilhespy and Holden's case, in that which I have described, and it is not referred to as having occurred in Harris's, the only three cases of mumps among those recorded in which true diabetes seems to have developed.

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A CASE OF HAEMATOPORPHYRIA CONGENITA (CONGENITAL PORPHYRINURIA).

BY

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THE child to be described first came under notice at the age of 12 months, and the reason for the child being sent to the hospital was the dark red colour of the teeth. The case was then thoroughly investigated, and proved to be an example of haematoporphyria congenita. Very few of the cases have as yet been recognized and recorded so early in life. Sir A. E. Garrod and Mackey[1] report one similar case, and I am indebted to the former's book, *Inborn Errors of Metabolism*,[2] for help.

The child was apparently born healthy and had had no illness of note. She had been easy to "bring up." All her life, however, and even directly after birth, she had passed urine which was red in colour and stained the napkins red. The teeth were cut at the usual time and were dark red in colour. The parents took her away to the seaside at the age of 4 months; the weather was then very hot and sunny. She came out in a rash on the face and back of the hands, which the mother described as looking like chicken-pox.

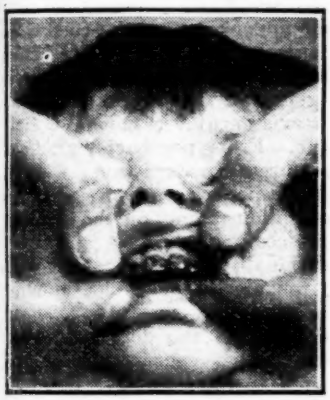

FIG. 1.—Showing the pigmentation (red) of the milk teeth.

Condition on Admission.

The child, aged 2½ years, is well grown and apparently healthy. She has been under observation for a year and a half, and the urine has been of the characteristic port-wine or red colour every time it has been examined. It contains no albumin or blood corpuscles. I am much indebted to Dr. A. Sellars for the spectroscopical examination of the urine and faeces. For this purpose the acid extract from the urine and the alkaline extract from the faeces were used.

Spectroscopic Examination.—Acid Urine: Position of two bands, mean central position at 6,200 and 5,640 (Angström units). *Alkaline Faeces:* Position of four bands at 6,480, 6,200, 5,640, 5,280 (Angström units). The position of the bands was ascertained by plotting against the spectral lines of lithium, sodium, thallium, and strontium.

The blood shows no abnormal condition and there is no enlargement of the spleen. A most striking feature of the case is the marked red pigmentation of the milk teeth. She cut her first tooth soon after the age of 6 months, and it came through red in colour. Dr. Wigoder ground a tooth, and the colour was as deep as the tooth could be ground, showing that the pigmentation is not superficial only. The child was demonstrated at a meeting of the British Dental Association, and no one had seen or heard of a similar case. It will be interesting to examine the milk teeth further, when they are shed, and also to see the condition of the permanent teeth. Only very rarely has the pigmentation of the teeth been noted. Curiously enough the bones do not show pigmentation when transilluminated by an electric bulb, nor do they show any changes on *x*-ray examination. The fundi of the eyes also show no abnormal pigmentation.

FIG. 2.—Hydroa vacciniforme showing the large bullae, some of which have burst.

The child was again taken to the seaside this year during a spell of hot weather, and had to be brought home again on account of large blisters appearing on the face, back of the hands, and front of the knees. This condition is called hydroa vacciniforme. Her face had become markedly pigmented from the sun and there were large bullae on the affected parts. The blisters, some of which had burst, contained clear fluid of a reddish colour. Scarring has been left after the blisters have healed. The hair and the clothes give complete protection. The nails of the hands were also affected and had become dark red, as if they had all received a blow causing bruising. It is certain that great care will have to be taken in the future against exposure to the sun to prevent serious disfigurement.

Sir A. E. Garrod concludes that the outlook for these cases is serious and that there is a liability to tuberculosis. This patient is, however, in good health; and, as long as precaution against excessive sunlight is taken, there is at present no sign that the child should not grow up and remain well. The family history of the child is negative. Most cases of porphyrinuria are the result of taking sulphonal or an allied drug for a considerable period.

The cause of the condition is unknown, but it is probable that the porphyrin is an intermediate product in the conversion of haemoglobin into bilirubin, as suggested by Hans Fisher. Whatever the exact cause may be, it is an inborn error of metabolism.

Haematoporphyrin is a most remarkable sensitizer.[3] A small quantity of this injected into white guinea-pigs renders them so sensitive that they die from exposure to light. Meyer Betz made himself very ill by exposure to very moderate light, after injection of a very small quantity into himself, and remained hypersensitive for weeks.

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FATAL CASE OF ANEURYSM OF THE SPLENIC ARTERY.

BY

DUNCAN C. L. FITZWILLIAMS, C.M.G., M.D., CH.M., F.R.C.S.

IT is well recognized that aneurysms are the risk of the strenuous life led by men and are uncommon in women; they are to be expected at that time in life when the tissues are beginning to weaken but the vital forces and feelings which impel violent action still remain at their height. They can be caused directly or indirectly by trauma which weakens the vessel wall, while certain diseases, by sapping the strength of the vessel wall, predispose the individual to the condition. Among the commonest of these diseases are atheroma and syphilis, while a less known cause is tubercle. A nodule of tubercle settling in the vessel wall may quite well be the cause of an aneurysm in those positions where a compensating fibrosis is unable to reinforce the strength of the vessel. For this reason aneurysms are sometimes met with in the brains of children—one such case is within my own recollection. There is also a case in which an important verdict depended on the result of the *post-mortem* examination, where a man had been seen to strike a boy upon the head and the boy shortly afterwards died, it was supposed, from the blow. Examination showed that a tuberculous aneurysm had ruptured in the ventricles of his brain.

These being the well recognized factors in the production of aneurysms, when we find that all these are set aside and we meet with an aneurysm in a woman of the age of 27, engaged in a light occupation, without any other sign of disease, and the aneurysm is not single but one of three, it seems to be a case that is worth recording: more especially as the symptoms resembled those of a ruptured gastric ulcer or an ectopic pregnancy in many of their features.

The case was as follows:

Jean O'C., aged 27, single, employed as kitchenmaid at a good address in London, was admitted to St. Mary's Hospital, Paddington, on November 27th, 1923, at 4 p.m.

History.—Sudden intense pain had come on with great tenderness in the pit of the stomach at 2 p.m., soon after food, with nothing whatever to account for it, and she was sent in by her doctor as probably a ruptured gastric ulcer.

On admission the patient was in a state of extreme collapse from shock; she was pale, cold, and clammy, and in great pain. On inquiry she had never had any indigestion pointing to a gastric or duodenal ulcer. Her blanched condition made one seek for symptoms pointing to an ectopic pregnancy, but there was nothing to indicate this. Light touch over the abdomen was not painful, but any pressure caused great pain. Her condition was very doubtful, and it was decided to leave her for some two hours to see if the shock would pass off. The respirations were 33, temperature 98°, and pulse 130.

At the end of one and half hours the shock was better, but the symptoms pointed still more strongly to haemorrhage, as she was still more blanched, and her pulse weaker, more rapid, and she was inclined to be restless.

At 6.30 operation was decided upon without any definite diagnosis being made. She was opened above the umbilicus, when the

abdominal cavity was found full of blood. A dresser at once prepared and gave her intravenous saline. Blaming myself for believing a single woman's history about her menstrual periods, and thinking that it was obviously a case of ectopic pregnancy, an incision was rapidly made above the pubes, only to expose a perfectly normal set of pelvic organs. On mopping out the blood and clots the whole of the peritoneum of the posterior abdominal wall was found to be one huge tense haematoma, almost filling the abdominal cavity and approaching the anterior abdominal wall. Blood had found its way into the mesentery of the small intestine and to a certain extent into the omentum. The lesser sac was full of blood, and was emptied in the hope of finding the main bleeding point, but the whole area seemed to ooze blood and no bleeding vessel was seen. As the patient was in a critical state and nothing was to be gained by prolonging the operation, the abdominal cavity was filled with saline solution and the wound closed; she was sent back to bed, and the foot of the bed raised. She died at 10.30 that night.

At the *post-mortem* examination the splenic artery was found tortuous and there were three aneurysmal dilatations along its course. The largest of these was the size of a walnut, and situated near the hilum of the spleen. It had calcified walls, which showed that it was not of recent formation. This had ruptured and was the cause of the bleeding into the tissues behind the peritoneum. The aorta and the arteries appeared healthy and there was no sign of the origin of the condition.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF LARYNGOLOGY AND OTOLOGY.

W. Jobson Horne, M.D., President.

PRESIDENT'S OPENING REMARKS.

The President, in opening the proceedings of the Section, said that, while he had no intention of inflicting a presidential address upon the Section, he could not refrain from expressing his appreciation of the honour conferred upon him. The officers of the Section, after fully considering the choice of several subjects suggested for general discussion, had unanimously decided upon the two subjects now submitted—namely, "Chronic tonsillitis: indications for treatment and results obtained," and "The importance of early treatment of acute otitis." The officers, in making this selection, were fully alive to the fact that the subjects were time-worn, but it was felt that there were points which would bear repeating if not emphasizing, and, moreover, that the matters to be discussed were of daily occurrence, and therefore of more practical value than other subjects less commonplace but more academic. Dr. Jobson Horne reminded them that the Section met on two days only, but it was his hope, with the help and support of the large number present, to get three days' work into two days.

DISCUSSION ON CHRONIC TONSILLITIS: INDICATIONS FOR AND RESULT OF TREATMENT.

OPENING PAPERS.

I.—A. BROWN KELLY, M.D., F.R.F.P.S.,
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The term "chronic tonsillitis" designates a long-continued, mild inflammation of the tonsil; oftener, however, it is used to imply a state of the tonsil which is not manifestly inflammatory but which predisposes to acute attacks. The two conditions of the tonsil which are mainly accountable for chronic inflammation and recurrent exacerbations are hypertrophy and sepsis; these are commonly associated.

In discussing the indications for treatment of chronic tonsillitis, we have to deal, not only with the disease itself, but also with its distant effects; further, in making choice of a method of treatment it may be necessary to take into account special circumstances—for example, the patient's age, general health, or occupation.

The commonest affection of the tonsils with which we have to deal is that of enlargement in the young. This may give rise to various symptoms which experience has taught will pass off when the tonsils are removed; consequently we advise operation, and in the great majority of cases our recommendation is accepted or even welcomed by the parents, the benefit generally obtained being a matter of common knowledge. On the other hand, various objections to operation may be advanced on the patient's behalf or may arise in our minds. First among these is the natural disinclination to the removal of an organ or tissue not obviously diseased. It should be remembered, however, that an enlarged tonsil, although apparently healthy on probing, squeezing, etc., if examined microscopically after enucleation will be found to be diseased. According to Dietrich,[1] the tonsils, even in earliest childhood, are attacked by acute inflammatory changes of all degrees, without signs or symptoms, in the course of various diseases of the upper air passages (measles, bronchopneumonia, etc.). Similarly, Howarth and Gloyne[2] found evidence of bacterial infection in every tonsil examined, their cases ranging from 2 to 15 years of age; while D. J. Davis doubts the existence of a normal tonsil after the first few days of life. From the bacteriological standpoint every tonsil is therefore a diseased tonsil. It is obvious that we cannot utilize this criterion, so that it becomes necessary to base our opinion mainly on the clinical history, concomitant signs, and local aspect.

Another question which occasionally perturbs parent and doctor alike, especially since tonsillectomy has become *de rigueur*, is whether this operation may not abrogate or destroy some important function from the deprivation of which the patient will suffer. This is conceivable in the young child and will be referred to immediately; but our everyday experience proves the contrary, so that we may cease to be discomposed by physiological misgivings. For the present it should suffice to remember that the tonsil is made up of numerous nodules of lymphadenoid tissue precisely similar to those found, not only in the pharyngeal and lingual tonsils, but also scattered singly or in small groups beneath the mucous membrane of the pharynx, and that the faucial tonsil differs in no way from any solitary nodule excepting in that it consists of an immense collection of such nodules. Schlemmer[3] has recently emphasized these facts, and maintains that there is no anatomical or physiological reason for assigning the tonsil a separate position or special function.

If, then, the tonsillar function is shared by the lymphadenoid tissue throughout the pharynx and nasopharynx, is it not probable that when the tonsil is removed its functions are carried on vicariously by the lymphadenoid tissue elsewhere? For, as already stated, no deleterious effect on the constitution has been traced to the mere absence of the tonsils after operation. This view gains support from a sequence of events occasionally noted. In a young child with large adenoids and small tonsils, if the former are removed and the latter left, at a not distant date the tonsils are found to have enlarged considerably; moreover, in children whose tonsils and adenoids are completely removed large granulations sometimes appear on the posterior or lateral wall of the pharynx and become inflamed from time to time.

In very young subjects the age is often advanced as a contraindication. There need, however, be no hesitation in removing enlarged or diseased tonsils from a child of 2 years, or even of 18 months, if healthy and vigorous. When younger, in order to lessen the bleeding and shock it is advisable to operate on the adenoids first, and after an interval of weeks or months to deal with the tonsils. It may be imperative to remove adenoids from a suckling, but it is rarely necessary to operate on tonsils before the completion of the first year of life.

Does the removal of tonsils increase or diminish the susceptibility to contagious diseases? In young children when the tonsils are at the height of their physiological

activity two of the functions assigned them by certain investigators are: protection against bacterial invasion by phagocytic action, and immunity resulting from the production within the tonsil of self-immunizing agents. Removal of the tonsils in childhood would demand even more consideration than it receives if these opinions were established, but as yet they are largely hypothetical. According to the view generally held enucleation lessens the liability to contagious diseases, and when such diseases are contracted the attacks are milder in those who have undergone operation. Place's[4] observations add support to this opinion. He states that in scarlet fever in tonsillectomized cases the throat symptoms are slight. In a few cases under his observation in which only one tonsil had been previously removed the tonsillectomized side of the throat was nearly normal, while the tonsillar side showed the usual picture of scarlet fever. Severe faucial diphtheria is excessively rare in those who have had the tonsils removed. In his experience there has been little if any indication of a deficiency in the resistance of tonsillectomized cases. Zahorsky, on the contrary, thinks it probable that an attack of acute tonsillitis renders the patient temporarily immune to a variety of dangerous infections, and that the child beginning his school life without the tonsils is in greater danger of acute diseases than one who still has them. As Logan Turner[5] states: "The answer to the question, Are the tonsils a protection or a menace? must be in the affirmative as regards both counts." In short, we should determine whether the tonsils are clinically healthy or diseased, and act accordingly; but in the young they should not be removed as a matter of routine procedure.

The question of the role played by the tonsil in producing enlargement of the cervical glands frequently arises. The tonsil, although not obviously diseased, is likely to be the etiological factor if the tonsillar gland is involved, or if the glandular enlargement is preceded or accompanied by tonsillar pain or swelling. In such circumstances, and when the tonsil is enlarged or septic, its enucleation should be carried out. Howarth[6] has shown that the enlargement of cervical glands is not necessarily tuberculous, but in many cases is simple and due to chronic irritation. He thinks that this stage often precedes a tuberculous invasion, as was pointed out by J. H. Nicoll[7] many years ago. Howarth considers that the tonsil is the portal of entry, and holds that the most important factor in the treatment of chronic glandular enlargement is the elimination of all primary foci of infection—the removal of the tonsil rather than of the cervical glands. In a large percentage of patients this is followed by the subsidence of the glands and possibly, after a year or even longer, by their final disappearance. It is advisable in such cases to mention beforehand the possibility of the operation lighting up the inflammation in the gland and leading to its suppuration.

Singers, professional voice users, and the parents of children whose voices give special promise often inquire whether the removal of the tonsils is not liable to damage the voice. A great deal has been written and said to prove the groundlessness of this fear. The latest contribution to the question is by Vorhees,[8] who bases his conclusions on evidence adduced by physicians and singing teachers from 5,000 operations. The consensus of opinion shows that in the hands of skilled operators there need be no fear of damage to the singing voice, that bad results are most often due to cicatricial contractions from careless dissections, and that the good results likely to follow far outweigh any other consideration. In spite of this reassuring pronouncement caution is called for. If the operation is done before puberty nothing but benefit is likely to result; later in life, however, when the vocal training is completed, surgical interference should be undertaken only after careful circumspection. The removal of a deeply seated septic tonsil cannot readily harm the voice, but enucleation of a large tonsil over which the anterior pillar is stretched, in a patient who has been singing for years, may interfere with the adjustment of the pharynx, predispose to vocal fatigue, and impair the quality of the voice. In such subjects, therefore, if operation is necessary, gradual reduction is to be recommended—for example, by morcellement, discission, the galvanocautery, or London paste (Irwin Moore). When the mere size of the tonsil is causing trouble contraction by radium might be considered.

In adults with chronic tonsillitis the disturbances due to sepsis are commoner and more important than those from hypertrophy. The sepsis may be manifest, as in the chronic lacunar variety. The tendency for tonsils on which tonsillotomy has been performed to become thus affected, and the local and constitutional benefit following the enucleation of such stumps, have long been recognized. It is of the latent variety of tonsillar sepsis, however, that I desire to speak. In recent years the subject of focal infections has received a large amount of attention in every branch of medicine. In view of the frequency with which the tonsil is the seat of a septic focus it behoves us to contribute what we can towards the elucidation of this difficult problem. I understand that it was largely with this end in view that chronic tonsillitis was chosen as the subject of to-day's discussion.

The faucial tonsils are peculiarly adapted for the development of septic foci. They are furnished with long, narrow, tortuous branching crypts reaching to the capsule, which favour the retention and accumulation of lymphocytes, leucocytes, and epithelial debris. The resulting collection may be considerable, and as no secretion is poured into the crypts whereby they are flushed out the contents in this protected situation serve as an ideal breeding ground for micro-organisms, so that septic changes readily take place. The blood vessels and lymph channels running in the trabeculae and passing through the capsule establish the connexion with the general circulation and thus allow of metastatic infections.

The opinions which have been expressed as to the influences governing the localization of infections are still *sub judice*. Until comparatively lately a secondary focus was believed to develop at a particular site in consequence of previous injury of the tissue involved, whereby its resistance was lowered; in many cases this explanation holds good and has been confirmed experimentally. The present tendency, however, is to adopt Rosenow's[9] view and to assign to the circulating virus the power of selecting a certain tissue for its lodgement and growth. According to the same authority the organisms are supposed to acquire their different degrees of virulence and their different affinities for various structures in the primary focus of infection. Another factor, which in some cases may play an important part, is the invasion of the cells of a tissue by bacteria from a septic focus in the tonsil, so that the cells are sensitized and react to minute doses of a homologous virus.

The detection of a septic focus, or good grounds for suspecting the presence of such, in a tonsil is manifestly a matter of importance. The presence of foul caseous plugs in the crypts or enlargement of the tonsillar gland may facilitate the diagnosis. In many cases, however, it is difficult or impossible by mere inspection to say whether a tonsil is healthy or diseased. The absence of signs by no means excludes the presence of a small chronic abscess close to the capsule or of a collection of decomposing debris at the bottom of a long crypt. It is often under such conditions, when retention is more or less complete, the affection latent, and the tonsil apparently innocent, that most injury is being caused. In this connexion some useful deductions can be drawn from what has been learned with the help of radiology regarding dental sepsis. Thus, Bertram Watson[10] believes that too much stress has been placed on pyorrhoea as a causative factor in the production of systemic disease, and that it is of secondary importance to apical infection, in which the deeply seated toxic process may be unaccompanied by suppuration.

Various procedures have been recommended and signs described to aid the diagnosis of focal suppuration in the tonsil. French[11] introduced a tonsilloscope for transillumination of the suspected structure, but I am not aware of this ingenious instrument having been extensively used. Pavey-Smith[12] considers that redness limited to the tonsil and its immediate surroundings, and especially a vertical red streak about an eighth of an inch wide running the whole length of the anterior pillar, is a sign of chronic tonsillar infection. General redness of the fauces and pharynx he regards as more suggestive of oral or nasal infection. Quite recently Lott[13] has described, and

Chevalier Jackson has illustrated, a sign resembling that to which Pavey-Smith has drawn attention. It consists in a narrow, sharply limited, and very dark red zone on the anterior pillar in front of the tonsil. Lott regards it as an important distinguishing feature of an infective tonsillar focus in which streptococci predominate. In his experience when a tonsillar focus of this nature is present tonsillectomy will yield good results in arthritis, neuritis, etc.

When a patient is sent to us suffering from a systemic disease which is known to be occasionally caused by a primary septic tonsillar focus, and we are asked whether the removal of the tonsils is likely to benefit the disease in question, on what grounds is an opinion to be based? Owing to the want of data it is often impossible to give a definite answer to this question, but in attempting to do so assistance may be obtained from consideration of the undernoted points.

1. Is a focus of infection present in the tonsil? If such is present, or if a predisposition to tonsillitis or to swelling of the cervical tonsillar gland exist, tonsillectomy is indicated even although there is no evident connexion between the septic tonsil and the disease in question. The patient should be told that the operation will cure the local affection and will almost certainly benefit the general health, but that improvement in the systemic disease cannot be guaranteed as it is doubtful whether the focus in the tonsil is the one causing trouble. On the other hand, failure to discover a septic focus in the tonsil does not exclude its presence.

2. Is the special focus for which search is being made in the tonsil? This is probable if, according to the clinical history, the onset of the tonsillar affection coincided with that of the secondary disease, or if varying states of the tonsil usher in or accompany corresponding phases of the former. When such relations can be proved and a septic focus exists in the tonsil, the prospect of curing the secondary infection by tonsillectomy is brightest; but even if no focus is discoverable in the tonsil operation may be recommended. In either case, however, a qualified prognosis should be given owing to the possible presence of a focus elsewhere than in the tonsils.

3. Are foci of infection present elsewhere? This is a question of great importance and should be carefully investigated before operation on the tonsil is advised. The regions which must be explored or taken into consideration are the gums and teeth, the nose and its accessory sinuses, the alimentary canal, and the genito-urinary tract. For this purpose the laryngologist must seek the co-operation of other confreres. A careful examination of the nose and its accessory cavities should be made, for, as Watson-Williams, Syme,[14] and others have proved, the tonsil in many cases has been infected by suppuration in the nose. In this connexion it may be emphasized again that a free discharge of pus is less liable to cause a secondary infection than a small amount bottled up. The state of the gums and teeth should be determined by *x*-ray examination. Septic foci occur more frequently in connexion with teeth than in the tonsil, and when necessary their treatment should take precedence of a tonsillar operation and may even render this needless. The family physician should consider the possible presence of a focus in the appendix, gall bladder, colon, etc. Chalmers Watson[15] remarks that bacteriuria is often overlooked in this connexion. If, then, in addition to a focus in the tonsil, one or several foci are found elsewhere, their respective importance must be weighed, and action taken accordingly.

4. If the tonsil is clinically healthy, has caused little or no trouble in the past so that there are no local indications for its removal, and if there is nothing in the clinical history pointing to a relation between the tonsil and the systemic disease under investigation, tonsillectomy should not be recommended. The only circumstances in which operation might be entertained in such a case would be the exclusion of all other likely foci, the fact that the disease in question was frequently associated with a septic tonsillar focus, and the urgent request of the patient to be treated.

5. When a systemic disease caused by a primary septic focus in the tonsil has been long present, it may receive no benefit from the removal of the tonsil and focus. The failure of the tonsillectomy is then probably owing to the development of secondary areas of infection which have become more potent than the primary, and which, after removal of the latter, continue to exercise a harmful influence.

In all cases of systemic disease suspected of being due to a septic focus in the tonsils these general principles should be borne in mind before recommending tonsillectomy.

I shall now refer to some of the results obtained by tonsillectomy in diseases which were due or assumed to be due to septic foci in the tonsils.

Mention should first be made of chronic toxaemia, which is manifested by a lowering of the general health, with lassitude, want of energy, loss of appetite, anaemia, etc. It is seldom that a patient does not express himself as feeling altogether better after the removal of diseased tonsils. St. Lawrence[16] states that no single factor (excepting prolonged country residence under regulation) stands out so strikingly in its effect on nutrition, well-being, and general health as tonsillectomy in cases which present indications for the removal of the tonsils.

Of all the systemic diseases etiologically related to focal infections in the tonsils, operation is most often indicated and successful in those belonging to the rheumatic group. This includes acute rheumatic fever, chronic arthritis, myositis or myalgia, rheumatoid arthritis, chorea, and "sore throat"; the last is not always accompanied by tonsillitis, as it may be met with in patients whose tonsils have been enucleated.

St. Lawrence has pointed out the importance of determining certain facts in order to estimate the value of tonsillectomy in those who have been subject to rheumatic manifestations prior to the operation. Inquiry should be made as to when the symptoms first set in, the frequency of their recurrence, and the interval between the last recurrence and the operation. Thus, a patient who has suffered from rheumatic symptoms for years with a recurrence or exacerbation every few months, or with bone and joint pains daily until immediately before the tonsillectomy, and who has no return of the symptoms after the operation, would certainly appear to have been benefited or cured thereby. On the other hand, if tonsillectomy is performed after a first attack of acute rheumatic fever or chorea, it would be wrong to attribute to the operation the non-recurrence of these affections, as single attacks are not uncommon. Further, he has rightly maintained that other factors must remain constant before and after tonsillectomy to allow of correct deductions being drawn as to its value. If, after the operation, the patient's habits are supervised and his housing. diet, general health, etc., are improved, due allowance must be made for the benefit accruing therefrom.

One must also be careful not to be misled by improvement in the patient's condition immediately after tonsillectomy; this may be only temporary. The effect of the anaesthetic, the rest in bed, and the restricted dietary often have a pronounced beneficial effect on rheumatism quite apart from any that may be due to the operation.

Further, when benefit follows the operation only after a long interval, the possibility of its representing merely a halt in the progress of the disease should be kept in view.

An elaborate investigation, to which repeated reference will be made, was carried out by Crowe, Watkins, and Rothholz[17] in the Johns Hopkins Hospital on the relation of tonsillar and naso-pharyngeal infections to general systemic disorders. The statistics of cases treated by tonsillectomy show that in infectious arthritis (of 31 cases, in 24 the joints became normal) and in myalgia (of 4 cases all were cured) the results were excellent. In some cases the joints were much worse for a few days immediately following the tonsillectomy, but began to improve after two or three weeks. Often it was six or eight months before all joint symptoms entirely disappeared.

The results obtained after tonsillectomy in 200 consecutive cases of all types of myositis and arthritis by Lillie and Lyons[18] were unusually good. Of those under 31 years of age, 81 per cent. were better; of those over that age, 77 per cent. Statistics are given as to various post-operative benefits—for example, the regained ability for

work, and the return to normal size of enlarged joints. In the entire series only 57 per cent. gave a history of tonsillitis. Operation was occasionally followed by an acute exacerbation of myositis or arthritis, which was hailed as a sign that the tonsils were the active focus of infection, but ultimate improvement was not noted in all such cases. From their experience they conclude that it is justifiable to advise a tonsillectomy in every frank case of myositis or arthritis, and that marked improvement may be assured from this operation alone in 79 per cent. of all cases.

In 54 (60 per cent.) of St. Lawrence's cases there was no recurrence of any rheumatic manifestation after tonsillectomy; in 31 cases recurrence took place. In 61 cases with myositis and bone or joint pains before operation there was no recurrence in 47 cases (77 per cent.).

A paper by H. S. Chapman[19] serves as a corrective to any tendency to regard the tonsils as the chief or only seat of septic foci in chronic arthritis. In a series of 125 cases the primary focus was believed to be located in the genito-urinary tract in 45, in the teeth in 62, and in the tonsils in only 18. All the patients in the last class gave a history of recurrent tonsillitis. In 7 tonsillectomy was performed with marked improvement in 4. The most striking results were obtained in the cases in which the focus was in the genito-urinary tract; when in the teeth, recovery was very rapid.

Of 477 adult tonsillectomies performed by H. Hastings,[20] 130 had suffered and sought operation because of rheumatism. This term included chronic arthritis in 101 cases, acute arthritis in 3, neuritis in 6, and myalgia in 20. No operation was done in any case of definite rheumatoid arthritis. In 46 cases tonsillar symptoms were absent. According to the subsequent history cure was obtained in 40 (30.7 per cent.), improvement in 40 (30.7 per cent.), no improvement in 24 (18.4 per cent.), and the results were unknown in 26 cases.

Whitton's[21] statistics are based on cases treated by tonsillectomy in the Ear and Throat Department of the Royal Infirmary, Edinburgh. They include examples of acute, chronic, and muscular rheumatism and rheumatoid arthritis. Of 23 patients, 14 were free from rheumatism at the time of writing, 3 were improved, while 6 showed no improvement. Of the 14 cured, 7 had acute rheumatism and 7 chronic arthritis. Rheumatoid arthritis accounted for two of those unimproved, and chronic rheumatism for the remaining four.

In rheumatoid arthritis the conclusion drawn from the results of the investigation in the Johns Hopkins Hospital (of 9 cases 2 were improved, 2 unchanged, and 5 worse) was that patients with this disease should be subjected to tonsillectomy only in very exceptional circumstances. In spite of the operation being most carefully done, a stay of from six weeks to three months in hospital was required in several instances in order to regain the pre-operative physical level.

Mollison's[22] results in rheumatoid arthritis (of 36 cases, 11 were cured and 25 improved) are encouraging and warrant operation in selected cases. He found that the early cases did best, but that even in advanced cases pain might be relieved although deformity remained. Instances of disappearance of slight deformity are known; in these the thickenings were not bony but in the tendons above the joints. He considers that age does not affect the question of operation; one of his most satisfactory cases was that of a woman aged 64.

The tonsils are most liable to become acutely inflamed in young subjects, and it is they who suffer oftenest from rheumatic fever and endocarditis following an attack of tonsillitis. Tonsillectomy has therefore been employed in those who have had rheumatic fever, in order to get rid of a likely source of infection, and so reduce the tendency to recurrence with possible further involvement of the joints and heart.

The Johns Hopkins workers reported the results of tonsillectomy in 25 cases, in 20 of which a cardiac lesion was present. When last examined the joints were normal in 23; and only 4 had had one or more recurrences of the rheumatic fever with polyarthritis.

St. Lawrence has studied the effect of tonsillectomy on the recurrence of acute rheumatic fever and chorea in 94 cases in a special children's cardiac clinic. Fifty-eight had organic disease of the heart. They were under observation after tonsillectomy for a period of from two to six years. The tonsils were hypertrophied in 77 cases (82 per cent.) and not enlarged in 17 cases (18 per cent.). They were the site of recurrent inflammation in 73 per cent. of the cases. After operation an appreciable amount of tonsillar tissue remained in 9 cases, which have therefore been eliminated. The statistics are based on the remaining 85 cases and have been worked out with unusual care and impartiality.

Recurring attacks of acute rheumatic fever were present in 42 of his cases. After tonsillectomy there was no recurrence in 35 cases, or 84 per cent. St. Lawrence concludes his valuable paper by stating that his experience has been such as to lead him to believe that the complete removal of the tonsils is the most important measure at present available for the prevention of acute rheumatic fever and the allied rheumatic manifestations.

Hunt and Osman's[23] statistics are based on 144 carefully observed cases. In 66 the tonsils were enucleated, and in 35 of these (53 per cent.) recurrences took place; in 78 no operation was done, and in 33 (42 per cent.) there were recurrences. These figures show that recurrences were more frequent in the patients whose tonsils had been removed. The authors consider that if local indications for operation are present, this is probably advisable in order to prevent further attacks of tonsillitis, but they condemn operation in rheumatic children whose tonsils and lymphatic glands appear healthy. It might be added that F. J. Poynton has expressed a similar opinion, that "it would be . . . a mistake to suggest the wholesale removal of tonsils in rheumatic children and those suspected of rheumatism when there is no evidence that they are diseased." (BRITISH MEDICAL JOURNAL, June 2nd, 1923.)

H. J. Starling[24] deals with the occurrence of tonsillar infection in cardio-vascular disease and the results obtained by tonsillectomy. He had 64 cases of mitral or aortic or combined disease. The total incidence of tonsillar infection was 71.45; while in 18 cases (28.45 per cent.) there was no history or evidence of tonsillar infection.

Enucleation was performed in 36 cases (aortic regurgitation 7 cases, mitral stenosis with aortic regurgitation 3, mitral stenosis 23, pericarditis 1, enlarged heart 2); age from 6 to 44. Tonsillar infection in 36. The results were as follows: no improvement 7, stationary 1, improvement 13, marked improvement 13, and no further record 2. No patient appeared to be the worse of the operation; this should be performed, if possible, after the acute infection has subsided. In apyrexial attacks of chorea and rheumatism tonsillectomy should be done at the earliest possible moment. Cases of advanced valvular disease which are so bad as to require rest will not derive much benefit.

Chorea being now regarded as a rheumatic or streptococcic infection of the nervous system, and in the past having been occasionally cured by the removal of tonsils and adenoids, the possibility of an etiological connexion between a septic focus in the tonsil and this disease should be kept in view.

Crowe and his co-workers of the Johns Hopkins Hospital followed up 23 cases of chorea in which tonsillectomy had been performed; in 13 of these there was no recurrence. They consider the operation an unjustifiable risk, but state that it may be advisable when the chorea is quiescent. It should be performed with the idea of preventing damage to the heart and joints rather than as a curative measure.

In 40 children suffering from chorea who were operated on by St. Lawrence there was no recurrence in 50 per cent. In general he considers that the effect of tonsillectomy on the recurrence of this condition seemed much less definite than existed in the case of the other rheumatic manifestations. He also noted that chorea, when associated with acute rheumatic fever or joint and bone pains, recurred less frequently than when it occurred alone or with sore throat.

J. B. Greene's[25] personal experience with tonsillectomy and adenoidectomy in chorea has been so satisfactory that

he is inclined to urge operation in this disease in the absence of other foci of infection.

Whitton's statistics dealing with 11 cases of chorea are not very encouraging. Of these patients, 2 have been well since the removal of tonsils and adenoids, 1 had attacks during the first two years following tonsillectomy, and in the remaining 8 chorea is still present, though 4 of these have improved.

A type of nephritis, characterized by glomerular lesions, is believed to be due to streptococcic infection. In most cases of this nature there is a recent history of tonsillitis, arthritis, rheumatic fever, or endocarditis. In 18 such cases in which the tonsils were removed as a therapeutic measure, the Johns Hopkins Hospital investigators obtained a history of tonsillitis in all but 2 patients, and found a heart lesion in 4, and arthritis in 5. Two cases died. Of those remaining they found that in 13 the urine was normal at the last examination, from eight months to three and a half years after operation.

Cautley[26] remarks that it is not widely recognized that infection via the tonsils is frequently the explanation of an attack of haematuria and albuminuria or even an acute nephritis. Such attacks are commoner in children than adults. He emphasizes the importance of carefully examining the tonsils and of having them enucleated if there is any evidence that they are a focus of infection. Generally he recommends delaying the operation until the local infection has subsided, but in severe cases it might be advisable to do it earlier.

It has been shown that certain chronic skin diseases may have an etiological relation to focal infections, including those of the tonsil.

H. W. Barber[27] has recorded cases of lupus erythematosus in which cure was obtained by removal of the tonsils and the use of an autogenous streptococcic vaccine prepared from them. Similar good results in a few isolated cases have been obtained in a like manner by my colleague Dr. Herbert Brown. Disappearance of this skin affection has also been reported by Whitfield after removal of the tonsils without vaccine treatment.

Barber[28] has also proved a connexion between chronic urticaria and focal sepsis, the latter being seated in some instances in the tonsils. He is inclined to think that in most patients in whom chronic or recurrent urticaria, with or without angio-neurotic symptoms, first appears in adult life the underlying cause is sensitization to bacterial rather than food proteins; the same, he believes, holds good as regards asthma and that type of eczematous dermatitis which is apt to be associated with it. The occurrence of pathological symptoms only in certain cases, and the difference in the symptoms in different individuals, are, in his opinion, also accounted for by sensitization.

In alopecia areata Barber has found infected tonsils, with or without adenoids, in 62 per cent. of a series of cases. He and Zamora have obtained rapid recovery in 7 cases after enucleation of the tonsils.

Leslie Roberts[29] has reported cases of lichen planus, alopecia areata, and prurigo which were cured or favourably influenced by tonsillectomy. All workers have not obtained the beneficial results above recorded.

In the course of an interesting paper on focal infection, Leslie Roberts outlines the views held by Vaughan and Zinsser, according to which the toxic effects following the introduction of pathogenic bacteria into the animal body are due not to endotoxins, but result from the action of the products of toxic cleavage. These products may be formed from all bacterial proteins—pathogenic and non-pathogenic—and from non-bacterial proteins. He considers that Vaughan's theory affords a rational explanation of the fact that the most widely different dermatoses—for example, lupus erythematosus, alopecia areata, lichen planus, etc.—may be associated with the same tonsillar flora.

Whitton reports the results obtained in 15 cases of goitre. All the patients were women. In 7 the goitre was simple; in 1 of these the swelling disappeared, in 2 it became less, and in 4 was not improved. Exophthalmic symptoms were present in 8; of these, 2 are well, 2 improved, and 4 unchanged. His results show that tonsillectomy in simple goitre does not give good results; in the toxic variety of exophthalmic goitre it may be adopted.

In 6 cases of epilepsy in Whitton's statistics cure was obtained in 4 and improvement in 2. In 5 children tonsils and adenoids were removed, and 1 adult was improved by tonsillectomy.

Many other diseases are reported to have been benefited by removal of diseased tonsils—for example, appendicitis, osteomyelitis, tuberculosis, iritis, keratitis, neuritis, herpes, Hodgkin's disease, leukaemia, arterio-sclerosis, etc. The relation of these to a septic focus in the tonsil must, however, be rare.

Opinions may differ as to the part played by septic tonsils in many of these affections, but it is established beyond doubt that the various rheumatic manifestations referred to are caused or maintained in many instances by tonsillar infection. I have operated on a considerable number of such cases, in some with, and in others without, benefit to the rheumatism. The great majority of those who still suffer have improved, I believe, in other respects. I hoped to have furnished statistics, but the thought of the correspondence necessary to obtain the data required proved too strong a deterrent. Moreover, information supplied, either direct or through the family doctor, to the laryngologist by a patient as to his own condition is apt to be biased by courtesy or policy. If one may judge, however, from the ever-increasing number of cases sent for operation, it would appear that both the consulting physician and general practitioner view favourably the effects of tonsillectomy in rheumatism and its allied affections.

In spite of the high percentage of cures reported as having followed the removal of the tonsils in cases in which tonsillar infection could not be detected, I do not recommend tonsillectomy to my patients unless the history indicates a connexion between the rheumatic ailment and the tonsils, or the latter are septic, or the tonsillar gland is involved. The operation is then useful and beneficial even if the rheumatism is not improved.

As time passes, we recognize more and more the capacity of the tonsils to do harm. The number of children whose tonsils and adenoids require removal must be appalling. Bryson Delavan,[30] in 1921, stated that the Board of Health of New York City estimated that relief would be required for 55,000 children of the public schools alone for that year. Wherein does our civilization err to produce these multitudes of ailing children? The full answer will not be forthcoming until more is known about the physiology of the lymphadenoid tissue in the pharynx, and especially the cause of its hypertrophy. To-day our task is to determine the attitude to be assumed towards the various manifestations of chronic tonsillitis, particularly those in which the tonsil is not obviously diseased but is suspected of being the seat of a focal infection.

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II.—C. A. SCOTT RIDOUT, M.S., F.R.C.S.,

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FIRST I should like to congratulate Dr. Brown Kelly on his able paper on the subject with which we have to deal, and the wide aspect from which he has approached it. At any rate in the South of England the subject of the indications for treatment in chronic tonsillitis, both in the child and the adult, is becoming of extreme importance, and I think it would serve a very useful purpose if this sectional meeting were to formulate some fairly definite line to guide the practitioner in recommending operative treatment in those cases in childhood which we might describe as border-line. I am not referring to the gross causes for operation, but rather to those cases where the symptoms of tonsillar trouble are entirely local, and not very marked at that. For instance, a great number of children are recommended for operation, their only sign or symptom consisting of one or two heavy colds with the accompanying heavy breathing of a winter cold, which a little local treatment will entirely clear up. At a later date no symptom whatever will be observed which would warrant one in advising operation. It is in this class of case that it is most difficult to decide when an operation should be strongly advised. The tonsils may be slightly enlarged, as one would expect after any acute trouble, and for the time being there may be some obstruction. It is not always possible to operate on these cases at once, even if suitable, owing to the number on the waiting list of a more urgent nature, and it is my custom to give them some local preparatory treatment, such as an alkaline nasal lotion and gargle, especially in springtime and during epidemics, when experience has shown us in Portsmouth that, on account of the sequelae, it is unwise to attempt operative measures except in cases of urgent necessity. It is probable that if every child were examined at some period or other during the winter, or during an epidemic of colds or influenza, some temporary increase of the lymphoid tissue of the tonsils would be noticed; indiscriminate operation in these cases, in my opinion, tends to bring the whole procedure into disrepute. The public is becoming alive to this fact, and there is already a tendency on the part of some parents to be a little diffident in consenting to have the operation done.

There is another point on which I think the opinion of the meeting should be expressed in no uncertain terms. One urgent cause for further treatment is the failure of the treatment already given—namely, tonsillotomy. Many children come having had, so it is said, their tonsils removed on one, two, or more occasions; there are still two very septic and definitely diseased stumps, half tonsils, sometimes more than half, in the centre crypts of which are shut up large plugs of inspissated pus. These conditions are generally associated with glandular enlargements in the neck and constant recurring colds; they form a very urgent case for treatment. When advising further operative treatment one is frequently met with the reply, "Oh, he had his tonsils removed only last year for the second time (possibly the third; I have even known the fourth), and it did him no good." It is obvious in such cases that only enucleation will result in complete improvement. This point, I think, falls well within the scope of our discussion, and, with the President's permission, I should like it debated whether it should not be definitely stated that for an absolute cure of a diseased tonsil total enucleation is the only operative procedure that should be done. In connexion with this I should like the meeting to make a pronouncement that operations on the tonsils should not be classed as an entirely minor operation, but be put into the category of the smaller major operations, and that no practitioner without plenty of experience and confidence of being able to carry out the procedure properly should undertake the operation. It is rather hard luck that a child—and there are many of them—should have to come into a hospital or nursing home, after several ineffective attempts at cure, for treatment which could have been done on a single occasion. I am sure that no one of us would wish our children to undergo such experiences.

As regards the other conditions for operation, experience has taught me in my clinic, and it is now my practice to group the cases as follows:

1. Great hypertrophy causing definite obstruction either on swallowing or respiration.
2. Hypertrophy with obvious infection of the tonsil crypts which are full of inflammatory matter.
3. The presence of otitis media, or of deafness.
4. The presence of enlarged cervical glands.
5. The history of frequently recurring attacks of tonsillitis, especially with joint pains, or history of rheumatism.
6. After any of the exanthemata if any tonsillar hypertrophy or obvious infection is present.

The other class of case, previously dealt with, is on the border-line, and it is my practice to keep the patients under observation. My experience is that many entirely recover, and that often, when they are kept waiting owing to want of accommodation, it is remarked that an operation need not have been done at all.

The public is also asking what is the use of a tonsil; is it not of some protective value? It is very difficult to say that it is not. When the public asks what is the use of removing a tonsil, my argument, an effective one, is that the tonsils may be compared with forts around a city, useful at first, but not when in possession of the enemy, when, therefore, it is necessary to destroy them.

Chronic tonsillitis in adults is an increasingly important subject. I have had during the last few years numbers of patients in whom the only septic focus discoverable was the tonsil or its remains. This focus produces very definite symptoms of trouble, and the patient comes complaining of frequent attacks of tonsillitis or quinsy. This is, I consider, a definite case for operative treatment if the patient is to be permanently relieved. Chronic rheumatism, or chronic pain in the joints with signs of osteo-arthritis, is another frequent accompaniment, and is the only septic focus that can be found in these cases, teeth being excluded. I fully agree with Dr. Brown Kelly in his paper that the nasal sinuses should be examined at the same time, as I find that in many cases of tonsillar infection the antrum and other sinuses show also a very definite infection. Another common symptom is aching in the neck, or a complaint of a distinct neuralgic pain shooting up to the ear and down to the clavicle. Conditions of anaemia combined with indigestion from toxaemia, with possibly slight evening temperature and also general malaise, form another group, and also cases in which bronchitis frequently appears. Many cases of retro-ocular neuritis and retinitis have been sent from ophthalmic surgeons for tonsillar treatment. As regards the treatment of these various cases, in my experience there is only one, and that is complete removal by enucleation of the tonsils. In the case of joint pains and osteo-arthritis, if the pains have just begun and the condition has not progressed very far, then relief is complete; if at a later stage than this, one cannot expect more than a cessation of the pains or an alleviation of the trouble. Patients in poor health and anaemic improve at once, and several cases of retinitis and retro-ocular neuritis have apparently benefited by the operation; I have not sufficient record of these cases to say whether the results are *post hoc* or *propter hoc*. Cases of valvular disease of the heart, if of rheumatic or septic origin, are very likely to improve considerably; nephritis with albuminuria has been known to clear up. There is one other very distinct symptom of which patients complain—foul breath—and plugs squeezed from the tonsil crypts are found to be stinking. One patient, the daughter of a naval officer, apart from general anaemia and ill health complained that the symptom, foul breath, was preventing her from getting partners at dances. Enucleation of the tonsils was performed, and the organs were found to be teeming with the spirillum of Vincent. The result has been complete recovery to good health.

One word as to the bacteriological investigation of tonsils. I quite agree with Dr. Brown Kelly that very seldom, if ever, is a sterile tonsil discovered. In forty-four cases of examination of both tonsils of which I have record there were only three or four sterile tonsils, probably due to some accidental cause. Remembering the number of patients who come complaining of symptoms I have mentioned, the number of cases at hospital and on the waiting list at my clinic with symptoms of increasing severity, I am

glad that this discussion has been started to-day. There are numbers of these people going about with septic foci to whom relief can only be given by operative treatment—people of all ages; the question of treatment becomes more acute as the age of the patient increases. These cases are often not recognized by the general practitioner. Above and before all other methods, enucleation by dissection stands out as the best form of treatment. I have not mentioned other forms of treatment, such as cauterization at several sittings, daily vigorous antiseptic painting, *x*-ray treatment, and also diathermy; these have their place in certain cases in certain circumstances.

One other word as to the results in singers. Last year I operated upon two ladies, one on the musical comedy stage, and the other an amateur singer at charities, etc. Both have since told me that their voices have improved since the operation. I must say that the operation was performed with some trepidation, but the results entirely justified it.

III.—E. D. D. DAVIS, F.R.C.S.,
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THE enucleation of tonsils is so common to-day that it appears to have taken the place of the blood-letting of our ancestors. The list of septic or general diseases said to be cured or benefited by the removal of tonsils is becoming longer and longer, and the following is a list of diseases or symptoms for which I have been asked to enucleate the tonsils: Frequent and prolonged colds; pyrexia of unknown origin; tuberculous cervical glands; goitre (both exophthalmic and parenchymatous); infective arthritis; endocarditis; chorea; nephritis; colitis and chronic appendicitis; septic diseases of the skin; enuresis; asthma in children, and false croup.

In addition, in the hunt for a septic focus, the tonsils are always under grave suspicion. The time has now arrived when a serious attempt should be made to assess the value of enucleation of the tonsils in such systemic diseases, and in the course of my remarks later on I will endeavour to prove the tonsils guilty or innocent.

There is ample clinical evidence to show that the tonsils are specialized lymphatic glands for the mouth, nose, and pharynx, and that such conditions as nasal sinus suppuration, septic teeth, or sepsis of the pharynx do produce tonsillitis or a chronic inflammatory condition of the tonsils, which disappears with the removal of the septic focus. What is still more important, the tonsils are the portals of infection for some of the general infective diseases. We may take tuberculous cervical adenitis as a good example of an infection which gains admission to the other structures of the body through the tonsil, and is one of the diseases of which we have the greatest scientific knowledge. Mitchell[1] has shown that 90 per cent. of the children residing in Edinburgh with tuberculous cervical adenitis were infected by tuberculous milk during the milk-drinking period (from birth to 5 years), and also states that in 64 consecutive cases of children suffering from tuberculosis of the upper deep cervical glands 24 (or 37.5 per cent.) of these showed histological evidence of tuberculosis of the tonsil. Again, the faucial tonsils have been removed from 90 children in whom the cervical glands showed no clinical evidence of tuberculosis, yet 9 (10 per cent.) yielded positive results when inoculated into guinea-pigs.

From the last observation and my own clinical experience, I consider it reasonable to assume that the tonsils can effectually prevent the tubercle bacillus and other organisms in moderate doses from entering the body, but if the dose is large, or the resistance of the individual is lowered, a general infection occurs. It is significant that in those cases in which tuberculosis or a general infection has entered the body through the tonsil, it has been accompanied by tonsillitis of varying severity, and tonsillitis is one of the manifestations of such infections. Therefore, when tonsillitis ushers in a general infective disease, one may conclude that the tonsil is guilty, and one always looks for this evidence in condemning the tonsil. There is good clinical support for Digby's[2] claim that the tonsils have an immunizing function, and the presence of the varied and large number of organisms invariably found by bacteriological examination in the tonsils is additional evidence of this function. When the tonsils are removed, the other adenoid or lymphatic tissue of the base of the tongue, pharyngeal mucosa, and cervical glands is sufficient to carry on the functions of the tonsils, and it has been observed that the adenoid tissue of the faucial and pharyngeal mucosa in the tonsil areas has become slightly hypertrophied. Moreover, H. H. Bell of St. Louis[3] has shown that in 20 patients who were carriers of the haemolytic streptococcus in the tonsils, in one to eight months after tonsillectomy the pharynx was found free of the streptococcus, and the same applies to the diphtheria carrier.

In my own experience, and in that of others, it is found that the resistance to infections possessed by the individual whose tonsils have been removed is certainly not lowered, but is rather increased by the removal of a septic focus, and that such patients are not more but less susceptible to infections such as scarlet fever and diphtheria (Rolleston and Goodall). It is claimed with good reason that when the tonsil is septic it becomes functionless, and not only loses its immunizing properties, but becomes a source of infection and danger. It is known that the tonsils commence to atrophy after the arrival of the permanent dentition or earlier, and some authors state that after this period the tonsil is functionless, and that there should be no hesitation in removing the tonsils should symptoms suggest the need; but there is ample clinical evidence to show that the tonsils are still active long after this period.

When a patient with one of the above infective diseases is suspected of having septic tonsils and has been thoroughly overhauled by a physician, I have adopted the following procedure:

I. The tonsils are carefully examined for sepsis or disease. The question at once arises, What is a septic or diseased tonsil? It is not easy to answer that question, because a septic tonsil shows varying degrees of tonsillitis, which often entirely disappear and no abnormality of the tonsil remains; moreover, the bacteriological examination is not reliable, as numerous and various organisms can always be detected in the normal tonsil. For these reasons the diagnosis of tonsil sepsis or disease frequently depends on the history of symptoms and signs which can be attributed to the tonsils, and particularly to a history of tonsillitis associated with the infective disease. However, the following signs, when present, indicate sepsis: (1) A history of attacks of tonsillitis and of symptoms indicating tonsil infection. (2) Slight enlargement of the corresponding cervical lymphatic glands. (3) Varying degrees of redness and oedema of the pillars of the fauces, with occasional elongation and oedema of the uvula. (4) The presence of pus in the crypts. The yellow plugs of secretion found in the crypts, and particularly in the supratonsillar fossa, are harmless; they are frequently seen in the routine examination of the throats of healthy individuals, or in those where there is no question of tonsil infection. The size of the tonsil is of comparatively little importance, and the buried tonsil, though hidden, is nearly equal in size to the superficially set and more prominent tonsil often seen in big men.

II. If the tonsils are found to be diseased, then it is necessary to eliminate any septic focus in the nose, pharynx, or mouth, which may be the cause of the tonsillitis.

III. In addition, the other paths of infection must be excluded—the teeth, urethra, and intestinal tract; in fact, all the orifices of the body must be considered.

Looking through my case-books, I find that 94 per cent. of the operations of enucleation of the tonsils have been performed for local reasons, such as middle-ear deafness, frequent tonsillitis, enlarged cervical glands, mouth breathing, etc. The great majority of these cases were in children, and the parents reported subsequently a marked improvement in the general health of the child, increased appetite, and more alertness. The evidence of a general practitioner who wrote a paper on this subject is significant; he stated that in some 30 cases in his practice, of children who had tonsils removed, he found that whereas before operation his visits were frequent and almost periodic, after

operation he had not been called in to see the children for eighteen months or longer. J. Keen of the Leicester School Clinic has also produced good evidence of the improvement in the nutrition and physique of the children who have had tonsils and adenoids removed.

Frequent and prolonged colds are stated to be produced by septic tonsils and adenoids, and I have satisfied myself that these catarrhal attacks are prolonged; also that scarlet fever and measles patients with enlarged tonsils and adenoids are more prone to have otitis media and a severe infection. On the other hand, I am not convinced that colds are less frequent after a tonsil operation, and it is quite common to see children with severe colds after successful removal of tonsils and adenoids.

Pyrexia of obscure origin in children has occurred in some of the tonsil cases. The temperature persists after a cold or catarrhal attack, the tonsillitis is overlooked, and there are no complaints of sore throat, but on examination the cervical glands are enlarged, the tonsils are inflamed, and enucleation results in a normal temperature.

Tuberculous cervical glands in the hypertrophic and acute stage rapidly improve with the enucleation of tonsils, and the disease becomes localized; but it must be admitted that this improvement occurs in some cases without enucleation. If the glands are not suppurating, it is distinctly advantageous to remove the tonsils and adenoids and then adopt antituberculosis treatment. This results in the tuberculous adenitis becoming localized to the tonsillar gland in the angle between the internal jugular and common facial veins, and it can then be easily and neatly excised. I have done 9 such cases with excellent results; in others my hand has been forced by suppuration and caseation of the glands, and the tonsils and glands have been excised at the same sitting with very satisfactory results.

Patients with exophthalmic and even parenchymatous goitres frequently have large prominent tonsils, and in a few (5) I have enucleated the tonsils for tonsillitis; there was no apparent effect on the thyroid, and I think that even the most enthusiastic will not claim any beneficial effect on the goitre.

In infective arthritis the best results have been obtained in young subjects who give a definite history of attacks of tonsillitis, with an exacerbation in the joint symptoms, and in whom there is evidence of tonsil sepsis. The arthritis is usually recent and called acute rheumatism, but in those cases in which the arthritis is of long duration, with deformity and fixation, little real benefit results from enucleation. In some of the chronic arthritis cases the removal of tonsils has a good psychological effect, and for this reason it is advisable to wait at least twelve months before assessing the real value of the effect of enucleation. However, 14 of the cases with attacks of tonsillitis and recent rheumatism were decidedly better and the results were highly satisfactory. Ten of the rheumatoid arthritis cases derived little benefit beyond the fact that the tonsils had been eliminated and that they had taken a fair sporting chance of relief from such a crippling malady.

Mollison,[4] who has made a special study of tonsil infection and chronic arthritis, states that: (*a*) The tonsil supplies the focus in a large percentage of cases of fibrositis, myositis, and arthritis; the figure is a good deal higher in the young than in the old. (*b*) The earlier the tonsil is removed the better the result, though even advanced cases benefit. Pain may be relieved though deformity remains, and in some cases deformity is reduced. (*c*) Cases showing bony changes on *x*-ray examination are the least favourable for operation.

It would be interesting to know how many children who have had tonsils and adenoids removed suffer from acute rheumatism or rheumatic fever, and this question has been answered by the report of the Ministry of Health on their investigations of rheumatism: 2 out of 332 males and 7 out of 515 female patients with acute or subacute rheumatism were recorded as having had their tonsils removed. These figures can be interpreted to indicate that patients without tonsils are less susceptible to rheumatism.

Choreic children were improved and certainly not worse after enucleation; but it must be remembered that chorea is a disease which is subject to fluctuations and tends to get well.

So far only a few cases of endocarditis and nephritis have been treated; the physicians in charge of the patients were pleased, but I think the operations are too recent and too few to permit any definite conclusion. Albuminuria, which accompanies some cases of tonsillitis, suggests an association between nephritis and tonsillitis.

I have seen tonsillitis both precede and follow many cases of appendicitis, and the attack of appendicitis is usually very severe. Poynton and Paine established the bacteriological relation between tonsillitis and appendicitis. Personally, I believe the tonsillitis is part of the general intestinal infection. Enucleation in the few cases of colitis treated had no effect.

The removal of tonsils and adenoids in cases of the true regular nocturnal enuresis has had no effect, and, conversely, many children with enuresis show no signs of tonsil affection. The suffocative attacks accompanying adenoids may produce an occasional wet bed, but that is not true enuresis. The same applies to asthma in children; the operation is without result in true spasmodic asthma, which must be distinguished from the occasional suffocative attacks or croup at night. Croup, on the other hand, in the absence of other causes is very definitely improved.

Three of four cases of erythema nodosum have apparently been cured by enucleation of the tonsils, and attacks of dermatitis have been known to accompany and appear to be more frequent in cases of nasal sinus or middle-ear suppuration.

In conclusion, if there are harmful symptoms and signs which can be definitely attributed to the tonsil, nothing but benefit follows enucleation.

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[1] Mitchell, A. Philip: BRITISH MEDICAL JOURNAL, January 17th, 1914. [2] Digby, K. H.: *Lancet*, November 17th, 1923. [3] Bell, Howard H.: *Annals of Otol., Rhinol. and Laryngol.*, June, 1924. [4] Mollison, W. M.: *Journ. of Laryngol. and Otol.*, April, 1921.

GENERAL DISCUSSION.

Dr. J. S. FRASER (Edinburgh) called attention to the fact that tonsils varied in size, and that they usually became enlarged when the child had a cold, but subsided within a few days. He referred to the two varieties of tonsil—pedunculated and submerged; the latter, although less "showy," were often the larger variety, and were certainly more likely to give trouble. In addition to Tilley's tonsil presser, Dr. Fraser advocated the use of a glass-and-rubber suction apparatus, the cup-shaped end of the glass tube being applied to the tonsil. It was sometimes astonishing how much secretion could be sucked out of a septic tonsil by this means. He did not agree with the opinion of certain American specialists, who had advocated in the *Laryngoscope* that the tonsils of all children should be removed at the age of 4; he was rather averse to removing tonsils before the age of 4 years, since he agreed with the view that the tonsil was an organ concerned in bringing about active immunity in young children. Last year, in America, he had heard that the treatment of enlarged tonsils by *x* rays had proved a failure. He always told patients that there was no useful line of treatment in cases of recurrent tonsillitis between gargles on the one hand and enucleation on the other. It was important that the parents should understand that it was not possible to promise freedom from attacks of coryza even after complete removal of tonsils and adenoids. Mothers were sometimes indignant because their children continued to take colds after this operation.

Dr. Fraser considered that the question of enlargement of the tonsillar lymph gland in the neck was almost more important than enlargement of the tonsil itself. Such cervical adenitis showed that infection had got through the first line of defence. The surgeon was, however, bound to depend to a considerable extent on the history of the case—for example, the child's mother or doctor might report that the child suffered from frequent attacks of sore throat, with enlarged tonsils, even though at the time of examination in the out-patient department only slight tonsillar enlargement could be observed. The Scots mother was not a fool, and many a one came to the infirmary of her own accord with a second child, to say

that she wanted the tonsils and adenoids removed, since her elder child, who had suffered from the same symptoms as the present one, was now "all right." In adults, even more than in children, the surgeon was bound to pay attention to the case history; for instance, a patient might state that he was off work for a week on several occasions each year on account of tonsillitis. In such cases the tonsils should be enucleated; on the other hand, Dr. Fraser did not think that a single attack of tonsillitis in an adult gave sufficient grounds for operation. In patients over 45 or 50 years of age it was advisable to be very cautious about advising enucleation, since such patients took a much longer time to recover. With regard to the question of focal infection, Dr. Fraser, like others, had found that numerous cases were referred by the physician for enucleation of the tonsils to cure all kinds of diseases, quite apart from rheumatic affections—for example, epilepsy, prurigo, lupus erythematosus, chorea, and various eye affections! A very guarded prognosis should always be given in such cases, even when the tonsils were obviously unhealthy. In many of these cases the operation had to be performed on the instructions of the physician, and Dr. Fraser had found that the results were not nearly so good as those obtained in cases of rheumatism. With regard to tuberculous cervical adenitis, the speaker was of opinion that it was bad surgery to remove tuberculous glands in the neck and to leave the tuberculous tonsils—the cause of the infection; the tonsillectomy should come first. With regard to tonsillectomy in singers, Dr. Fraser's experience had been very satisfactory.

Dr. W. S. Syme (Glasgow) said that Dr. Brown Kelly had given a very clear and comprehensive survey of the question of the frequency of tonsillar disease and of its effects; his advocacy of radical measures in its treatment had the greater force because he had the reputation of being conservative in the matter of operation. They must recognize that a healthy tonsil was the exception, except perhaps in the first year or two of life. He was convinced that in the majority of cases of children who came to them with symptoms pointing to tonsillar disease the infection had already passed beyond the tonsil and invaded the glands, which were already palpable. In the methods of examination of the tonsil there was still too much that was slipshod. The tonsil could not be properly examined by merely illuminating the pharynx and placing a tongue depressor in position. The tonsil surface looked towards the middle line, and to examine the tonsillar crypts properly it was necessary to turn the tonsil towards the observer. This could be done either by making the patient "gag" or, better still, by hooking back the anterior pillar with the depressor and turning the face of the tonsil forward. At the same time pressure could be made on the base of the tonsil and purulent or degenerate material expressed from the crypts. While it was probable that sometimes tonsillar infection was the cause of other diseased conditions, he was quite convinced that rheumatic infections of all kinds were commonly dependent on infection from septic tonsils. He had seen frequently instances of improvement, and sometimes of cure, of rheumatic conditions from tonsillectomy. Naturally, in this connexion, the extent of the benefit would depend much on the actual rheumatic affection present, and on the extent of the changes which had taken place in the joints. Strong evidence of the value of complete removal of the tonsils in rheumatism was found in the fact that physicians in attendance on these cases were so convinced of this benefit that they sent their rheumatic patients to laryngologists in increasing numbers for examination, and, if necessary, for operation. The laryngologist was, of course, not content with examination of the tonsils, but looked also for a septic focus in the nose and accessory cavities, of which, indeed, the septic infection of the tonsils was often a result. Apart from the rheumatism, the relief from the toxaemia showed itself in marked improvement in the general condition of the patients after removal of septic tonsils. This toxaemia might manifest itself by effects on the kidneys. During the past year in Dr. Syme's department of the Western Infirmary, Glasgow, albuminuria had been present in forty cases of diseased tonsils in children and adults; this was in about 3 per cent. of the patients. In most of these the albumin had disappeared after operation, but in a small number, evidently more severely affected, changes had taken place in the kidney and the albumin persisted.

It was not the large tonsil which was the most hurtful; it was, indeed, probable that the large tonsil, which projected into the pharynx, was more easily kept free from gross infection by the movements of the tongue and pharynx. It was the buried tonsil which was the greater danger. With regard to diseased tonsils in singers, Dr. Syme could not think that the presence of these could have anything but a harmful effect on the voice, owing to the thickening of the pillars to which they gave rise and to the frequently recurring attacks of laryngitis. The tonsils should be removed, with special care, of course. It had been his experience that as a general result the voice had improved, and in some the register was appreciably enlarged. At least three, and probably six, months should elapse after the operation before singing was resumed.

Mr. J. F. O'Malley (London) asked what the function of the tonsil was. The answer, in his opinion, was that it had the same function as was found in all lymphatic tissue—namely, to react to sepsis and confer immunity. When this conferring of immunity was overdone the removal of the tonsils was indicated. With reference to the types of tonsils, the large superficial one was often associated with good health, and was not prone to sepsis, because the drainage from its crypts was perfect. The buried tonsil was a different proposition. The tonsil was often described as a "naked gland," which was practically true of the superficial one, but the buried one was usually three parts covered; it was the cause of cervical gland infection and enlargement, which must be regarded as manifestations of systemic infection. In adults the question of the tonsil being a focal centre of sepsis as the cause of some condition such as arthritis, the history of no pain in the throat was misleading. A tonsil might be saturated with sepsis and still the patient did not complain of pain. Pain in relation to tonsillitis was due to a myositis of the faucial pillars, the result of an inflammatory overflow. Colds in the head could not be attributed to the influence of tonsils and adenoids, except inasmuch as the adenoids might cause some nasal obstruction. The nose had a sheet of lymphatic tissue of its own, and continued to react to infection, just as the tonsils and adenoids did after the latter had been removed.

Mr. A. B. Pavey-Smith (Harrogate) said, with regard to the question of focal infection, that at the Royal Bath Hospital at Harrogate he had had the opportunity of seeing a large number of cases of chronic arthritis and allied conditions in which the tonsils were suspected as a possible infective focus. He had now a detailed record of such cases in which a bacteriological examination had been made of the tonsils after removal. All the cases operated on showed some signs of tonsil infection, though in some the signs were very meagre; but 99 per cent. were found to be infected with streptococci. In over 70 per cent. the crypts were dilated and contained pus, and in 70 per cent. the glands were palpably enlarged. Now of these only one-third could be described clinically as cases of chronic tonsillitis. In the remainder no throat symptoms were complained of, and the history was negative. So far as could be judged, a tonsil which produced local symptoms was indistinguishable from one which produced none, as regards its infectivity, its contents, and its size. He differed from Dr. Brown Kelly with regard to the importance of the history. He thought that a positive history of previous throat trouble was important, but that the fact that the history was negative was of little value in assessing the infectivity of the tonsil. The points to which he paid particular attention were the enlargement of glands and the presence of pus in the crypts or of bleeding from the crypt mouths on slight pressure, which he regarded as evidence of granulations in the crypts. If, then, a tonsil could thus be grossly infected and produce few signs and no symptoms, it appeared to him unlikely that any treatment

short of enucleation could cure a declared case of chronic tonsillitis. A tonsil which was a persistent source of symptoms, especially in adults, was almost certain to be a sink of iniquity, or, at the best, a whited sepulchre. For though the pus, the debris, and the organisms might be only in the crypts, and not truly in the tissues, it was impossible to say when the barrier—whatever its nature, whether capsule or crypt epithelium—would be broken down, and infective material pass into the blood and cause much wider effects. He thought that in this connexion tonsillectomy had a place not only as a curative but as a preventive measure.

Mr. H. BELL TAWSE (Nottingham) said that in a small proportion of cases he found it extremely difficult to determine whether or not a tonsil was septic. In children the usual methods of suction of the crypts and pressure on the tonsils, etc., were sharply resented, and in the absence of other local evidence he reserved the decision until the child was under an anaesthetic. Then he placed the ring of an open guillotine against the posterior pillar and gently pressed the tonsil against the angle of the jaw. If no pus, cheesy material, or bloody mucus was squeezed out he considered the tonsil normal. Enucleation was the only operation worth doing. Investigations in London County Council schools as to the relation of tonsils and adenoids to the incidence of scarlet fever, etc., were made some years ago, and it was found that (1) cases of enlarged tonsils and adenoids provided the largest numbers of cases of infectious disease; (2) children who never had enlarged tonsils and adenoids came next; (3) the least frequent were those who had had tonsils and adenoids removed. The conclusion seemed to be that the frequency was reduced by removal. The Board of Education and the Ministry of Health were now conducting an investigation into the causes of enlarged tonsils and adenoids and the results of treatment. The school medical service and infant welfare centres were to be used, and he thought it would be well if the Section in its discussion would emphasize, for the help of the medical officers of these clinics, the importance of carefully examining those tonsils which were not obviously enlarged, but which in many cases were the cause of rheumatism, repeated febrile attacks, and other diseases.

Mr. F. HOLT DIGGLE (Manchester) also stressed the importance of complete enucleation or removal of the tonsil as the only operation to be adopted. In 1921 a consecutive series of 75 pairs of tonsils were examined histologically by him; of these, 5 were definitely tuberculous although there had been no clinical evidence. The complete enucleation of the tonsil was all the more important in cases of cervical adenitis. Cases were frequently seen where the cervical glands had been removed and the tonsils left. During the last four years he had had 12 cases of marked enlargement of the cervical glands necessitating operation. In all these cases the tonsils were enucleated at the time the glands were removed. Eight of these cases examined three years after operation showed no further glandular enlargement, and the children were well and healthy. In three of these cases the tonsils were histologically tuberculous. Referring to the relationship of accessory sinusitis and tonsillitis, particularly in adults, Mr. Diggle considered that it was very important to examine the nose and its accessory sinuses before removing the tonsils. Occasionally adults whose tonsils had been removed for recurrent tonsillitis were no better; and they still had pain and aching in the throat, and the posterior wall of the pharynx and posterior pillars of the fauces were found to be inflamed and swollen. These cases on closer examination often revealed some form of accessory sinusitis. Considering the benefit of tonsillectomy in cases of chorea, Mr. Diggle said that during the last four years he had operated upon 12 cases with 6 cures, 2 were no better, and 4 were not traced. He was undoubtedly of the opinion that children whose tonsils and adenoids had been removed were not so liable to serious nasal or aural complications during the exanthemata, particularly measles. He believed that many innocent tonsils were removed, particularly in children. It was common knowledge that the tonsils enlarged with any nasal catarrh, and to decide at one consultation only the question of the removal of the tonsil was perhaps unfair. He considered that if a child was suffering from a nasal cold at the time of examination the patient should be seen again, when the cold had subsided, before deciding the question of tonsillectomy.

Mr. T. B. JOBSON (Guildford) said that during the past two years he had had two cases of duodenal ulcer in which he had removed septic tonsils, and within a few months the symptoms, which had endured for two years without improvement under various forms of treatment, had completely disappeared.

At the end of the discussion the following resolutions were proposed by Mr. C. A. SCOTT RIDOUT, seconded by Dr. WILLIAM HILL, and carried unanimously:

1. That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association records its opinion that tonsillectomy by enucleation is the only efficient operation in dealing with tonsillar disease, and that partial removal by operation is not effective.
2. That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association considers that the operation of tonsillectomy should be no longer conducted as a minor operation, but as one of the lesser major class of operations and should be undertaken in that spirit.
3. That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association considers that the discussion which has taken place on the indications for removal of the tonsils has shown that this operation should only be undertaken after expert opinion has been given.

The PRESIDENT, in summing up the discussion, said the valuable co-ordination in the opening paper of recent work on the subject, and the many points brought out by the subsequent papers and speakers, fully justified the choice of this subject for general discussion. He was not in favour of putting the four-year-old tonsils on the same footing as the six-year-old molars as things to be removed as a matter of routine procedure. The tonsils, in his opinion, had a definite function or functions, and one was—as he had learnt from animal experiments he performed some years ago[1]—bactericidal. When that function ceased, when the tonsil had lost its sterilizing action, and when it was no longer not only not sterile but even septic, as shown by the enlargement of the adjacent submaxillary tonsillar gland, then the time had come for the complete removal of the tonsil. Enlarged tonsils were not necessarily diseased or functionless tonsils. The largest pair of tonsils he had met with could not have been squeezed through the largest guillotine made; yet they occurred in a young man who had never suffered any inconvenience from them: they were not removed. The worst offenders were the invisible shrivelled septic tonsils sneaking behind the pillars of the fauces—more difficult ones to remove and so more often left. The enlargement of the tonsils was evidence of a battle, or of battles, fought and won. The enlargement of the tonsillar lymphatic gland was evidence of the tonsil being put out of action, and of its becoming a source of danger. Climate—especially the climate of Britain—and exposure to damp and inclement weather were factors in the enlargement of lymphadenoid tissue, as mentioned by one speaker in the case of policemen and the Portsmouth boys. It was usual to speak of "tonsils and adenoids." In many cases if the adenoids were completely removed the tonsils might be left with benefit—but not vice versa; and it would therefore be more correct to speak of "adenoids and tonsils." In surgery it would be difficult to mention an operation more productive of immediate and permanent benefit than that for the removal of adenoids and tonsils when efficiently carried out. Unfortunately it was not always treated with sufficient ceremony; and little things, when not treated with due ceremony, were apt to become big things. The resolutions unanimously passed by the Section, if properly heeded, could bring nothing but good results.

[1] *Journ. Laryngol., Rhinol. and Otol.*, vol. xx, 1905, pp. 45-46.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUBMUCOUS RESECTION OF THE NASAL SEPTUM: A SIMPLE FLAP SUTURE.

I WISH here to describe a simple method of suturing the original incision through the muco-perichondrium after completing the submucous resection of the nasal septum. A variety of special needles are in use for the purpose; some of them are difficult to use, especially the small intestinal needles favoured by some operators, if the incision, for one or another reason, happens to have been made a little further back than usual. They also soon lose their original sharpness and become dull owing to general wear and tear, and unless replaced or repaired are apt to tear the flap through or rag it and make too large a hole, causing the suture to cut out. Faulty apposition of the edges of the incision is another difficulty.

Many surgeons have dropped out of the habit of suturing the incision and console themselves with the belief that it is not necessary, and that the opening in the muco-perichondrium provides useful drainage. Such procedure does not hold good in any other operation that I know of, performed under aseptic conditions and where healing by first intention is desired. We know also that, from one cause or another, the edges of the incision may afterwards separate more or less and healing will be delayed, and crusting will assuredly take place, and may result in a permanent "dry" area at that part of the septum. This condition may be followed some weeks or even months later by a perforation of the septum. I am inclined to think, therefore, that this incision would be sutured in every case if an efficient needle lay ready to the hand of the surgeon. It does, in the shape of the ordinary hypodermic needle. This needle is generally carried in the surgeon's bag, is always available in hospital and nursing home, and as a rule is in perfect order and does not suffer from any of the disabilities of needles specially designed for the job.

Illustrating the method of suture of the incision through the muco-perichondrium by the hypodermic needle.

The method of using it is as follows: a strand of sterilized horsehair, which is most commonly used for this suture, is passed through the needle from the point and is then drawn through the needle until the other end of the horsehair just disappears from sight. The "butt" end of the needle is held between the first finger and thumb, while to avoid inadvertently withdrawing the horsehair altogether in passing the needle through the edges of the incision, a loop of slack is made, behind which the horsehair is held between the second and third fingers. The needle is manipulated by the right hand in the case of suturing the right side of the septum, and vice versa. After passing the needle through both edges of the incision, the horsehair is fed through it and the end grasped by any convenient forceps and held while the needle is withdrawn from the strand, the suture being then completed in the usual way. The ease and accuracy with which this method of suture can be accomplished without any risk of damage to flaps will, I am sure, be appreciated, which is my reason for handing it on to others. One precaution should be taken, and that is to see that the strand of horsehair runs quite freely through the needle from end to end, as there is a considerable variation in the thickness of the strands in the ordinary "hank."

W. Frank Wilson, M.B., B.S.,
Honorary Assistant, Throat, Nose, and Ear Department, Royal Victoria Infirmary, Newcastle-upon-Tyne.

OPIUM POISONING, PONTINE LESIONS, AND ENCEPHALITIS LETHARGICA.

I HAVE just seen in recent issues of the British Medical Journal two instructive cases illustrating the difficulties of diagnosis of pontine lesions, and I think it will be of interest to record a somewhat similar difficulty which I experienced as a house-physician.

About 6.30 a.m. I was called to see a man, brought by the police, who had found him lying on the pavement in a state of partial coma and collapse. I found him to be about 50, very dirty, obviously destitute, and in a cold and collapsed condition. His temperature was subnormal and he was semi-comatose, but at fairly regular intervals his whole body was shaken by clonic convulsions, which increased in violence for about fifteen seconds and then gradually passed off in about half a minute. There was no paralysis of muscles or limbs, and sensation to deep painful stimuli was intact, the patient being sufficiently conscious to resent the test; reflexes were a little exaggerated; there was no incontinence. The cranial nerves could not be adequately tested at that time, but the pupils were seen to be pin-point and fixed. The patient's body was covered with that pigmentation of the skin which is caused by scratching and associated with phthiriasis.

Being perhaps overfull of youthful ardour, at the sight of those pupils I decided on immediate action, washed out the stomach, and then had him put to bed and warmed up with hot bottles. His condition remained the same the whole of that day, and the diagnosis presumably still lay between opium poisoning and a pontine lesion. Next day, however, the convulsions had diminished in frequency and intensity; the temperature was raised a little; the pupils were bigger and he had some ptosis, more marked on the left side, and a divergent squint on that side. His lethargic condition continued for about a week, but it was noticeable that he could be aroused sufficiently to take food. During that time the temperature remained a little elevated but never went very high. In the course of the second week his mind cleared, the third nerve paralysis began to pass off, and he made apparently a complete recovery. He left the hospital and never returned, so whether any mental symptoms followed I do not know. I should add that on the day of his admission a lumbar puncture was made; the fluid was found to be under pressure, but was otherwise normal, with the exception of the presence in increased quantity of some sugar-reducing substance.

The case was particularly interesting at the time, as on the second day it was recognized as one of a hitherto unclassified disease, which was just beginning to appear in epidemic form. The disease was at first thought to be possibly botulism, and was later named mesencephalitis, and finally encephalitis lethargica.

Humphrey W. Toms, M.B., B.Ch., D.P.H.
Bangkok, Siam.

LABOUR OBSTRUCTED BY EXTENSION OF THE FOREARMS.

THE two cases here reported presented the unusual feature that the child was delivered with the forearms extended, the limbs being placed laterally. There was thus an obstruction, as the spine had not its usual facility of lateral movement in descent. Considerable difficulty in the delivery of the shoulders arose also from the fact that an arm could not be brought out to reduce the bulk. Both patients were primiparae and the presentation a first vertex.

The first patient had been long in labour and was becoming fatigued. It was decided to apply forceps in spite of the fact that the cervix was not fully dilated. Dilatation was completed digitally and forceps applied. No difficulty was met in extracting the head. On the shoulders reaching the vaginal ostium the hands were not observed in their normal position across the chest, and some delay occurred in extraction. With the second patient the expulsion of the head was by the natural forces. The same difficulty in extracting the shoulders arose.

Extension of the lower limbs has been described as occurring *in utero* and has been observed in frozen sections. The condition, if diagnosed before labour sets in, should be capable of correction. The second patient was examined a day or so before labour and no abnormality was detected. In this case the position of the arms seems to have developed before labour set in. In the first I had attributed the abnormal position to the forced extraction, as I had not then met another similar case. In neither patient was there pelvic contraction. There is naturally an increased tendency to perineal tears in this condition.

Burgess Hill. I. H. Lloyd-Williams, M.B., B.S.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

OXFORD DIVISION.

A well-attended meeting of the Oxford Division of the British Medical Association was held in the Radcliffe Infirmary, on October 17th, when the President, Dr. J. O. Summerhayes, extended a cordial welcome to the new members present.

Mr. Hugh Whitelocke reviewed the history and etiology of cervical ribs, giving notes of six patients operated on in hospital since 1912. He showed a case of bilateral ribs of the second degree, in a woman, aged 30, who had had right brachial neuralgia for ten weeks. At the operation a portion of the right rib was removed with consequent relief of symptoms.

Dr. R. B. Abraham read a short paper on the treatment of kala-azar by antimony tartrate. A 2 per cent. solution of this salt in distilled water was freshly made for each patient, 0.5 c.cm. being given as a first injection and the dose being increased on alternate days until 2 grams had been administered. The treatment lasted about three months, during which the patient might be very ill. The mortality in all types of this disease was about 10 per cent.

Dr. J. Rickards read notes on two cases of lymphadenoma in which the diagnosis during life presented great difficulty owing to the anomalous type of the disease. Both were characterized by continuous, though more or less remittent, fever, progressive weakness, sweats, cough, and expectoration. About eighteen months elapsed between the onset of the illness of each patient, and in the second case the correct diagnosis was suggested by recalling symptoms of the first patient.

Dr. William Collier introduced a discussion on the value of morphine in heart and kidney cases. After referring to the reluctance of many practitioners to use this remedy for these cases, Dr. Collier quoted several instances of patients being definitely benefited by its use, and said that in cardiac and renal dyspnoea, or in cardiac cases where pain and insomnia were outstanding features, a hypodermic injection of morphine was indicated.

Sir Archibald Garrod discussed the etiology and treatment of joint affections, and showed a patient with rheumatoid arthritis, who was receiving treatment by the protein shock method.

Dr. A. G. Gibson showed a man, aged 51, suffering from epithelioma of the posterior nares, with perforated palate and enlarged cervical glands, proptosis, paralysis of the sixth nerve on the right side, and paresis of the fifth nerve on the same side, where the neoplasm appeared to be extending to the brain.

Mr. E. C. Bevers presented a case for diagnosis. The patient, a girl aged 18, had had a swelling of the left forearm for three years, which was gradually becoming larger. *X* rays showed the existence of calcification in the muscle and a suspicion of caries on the inner side of the coronoid process of the ulna. Various diagnoses were suggested, and Mr. Bevers undertook to report to a future meeting the condition found at operation. He showed also a boy, aged 7, with congenital idiopathic dilatation of the colon, who had suffered from frequent attacks of constipation, abdominal distension, and vomiting since birth. By the use of enemata and liquid paraffin, operation had hitherto been postponed.

Mr. A. P. Dodds-Parker showed a man, aged 35, with bony thickening and tenderness of the right tibia, provisionally diagnosed as gumma. The Sigma test was negative, however, and the report on a piece of bone removed was osteitis fibrosa. *X*-ray photographs of other bones showed commencing osteoporotic changes.

Dr. W. T. Collier read notes of the subsequent history of a patient with general paralysis of the insane, whom he had shown at a previous meeting (British Medical Journal, June 21st, 1924, p. 1091), and who had been inoculated by Dr. Manson-Bahr with benign tertian malaria. At the end of the consequent attack of malaria, which was terminated after fourteen days by the oral administration of quinine, the patient appeared to improve considerably and was able to return to work. Dr. Collier promised a later report after the lapse of two or three years. Dr. T. S. Good reported having had fourteen cases of general paralysis of the insane infected from malarial organisms recovered from Dr. Collier's patient; in two early cases there had been marked improvement.

Reports of Societies.

COMPARATIVE MEDICINE.

Mr. F. T. G. Hobday, the new president of the Section of Comparative Medicine of the Royal Society of Medicine, delivered his address from the chair on October 22nd, taking as his subject "The Comparative Section."

He gave a brief outline of the history of the formation of this, the youngest Section of the Society. When the formation of such a section was first mooted it was received enthusiastically by both the medical and veterinary professions. The name, however, gave some difficulty, and "Comparative Medicine" was chosen in preference to "Comparative Pathology" or "Veterinary Medicine" in order to extend its activities and to avoid the suggestion of "watertightness." They had had a very successful first session, but there were still many problems for the Section to tackle. In addition to diseases common to man and animals (such as tuberculosis and various parasitic diseases) there were many diseases which, although having a different etiology, were analogous to each other, such as influenza in man and in horses. There was also the very large question why some animals were immune to diseases found in a related species; for instance, why cattle should be immune to glanders when horses were not, and so on. Diseases of plants were also of importance. Practically every Section of the Society, not even excepting Psychiatry, could benefit from its association with the Comparative Section; and he predicted a very active future for it.

Mr. R. Eustace Montgomerie then read a paper on some diseases of Eastern Africa intercommunicable between animals and man. Rabies, he said, was of comparatively recent origin in British East Africa, and did not seem to be communicable to man. The disease originated from a jackal, and although all the clinical and biological and histological tests were positive, and there were instances of natives having been bitten, there were no records of any cases of hydrophobia. Cysticercosis due to *Taenia solium* was at one time much more commonly reported than that due to *T. saginata*. Now, however, the positions were reversed, and *T. solium* was relatively uncommon. "Measles" in pork was rare, and he suggested that either the pork tapeworm had an unusual host in East Africa or else diagnosis had been faulty. Sanitation was crude among the natives, and cattle had every opportunity of becoming infected. Steps should be taken to provide some sort of communal latrine from which cattle could be excluded. Bovine tuberculosis was so rare as to be negligible in the country, but if cysticercosis was found to exist in beef it would seriously prejudice any future meat inspection industry. Anthrax was not uncommon; but although the natives always ate any cattle dying from that disease as from any other, few deaths were recorded from this source, and an increased resistance to anthrax by the alimentary tract seemed to exist. Malta fever was present, but, so far as he knew, contagious bovine abortion, due to a strain of the same bacillus, was not. Trypanosomiasis was common in cattle, and Mr. Montgomerie commented on the resemblances between *T. gambiense*, *T. rhodesiense*, *T. brucei*, and *T. pecaudi*—the two former affected man, and all four occurred in cattle, causing a comparatively benign chronic disease. The spread of the tsetse fly was, in his opinion, partly due to the outbreaks of cattle plague, which, depriving the natives of their cattle, had allowed scrub and brush to extend to places otherwise required for grazing, and so enabled the fly to breed. Foot-and-mouth disease in East Africa was benign, and man did not appear to be affected.

Mr. D. S. Rabagliati, in comparing the diseases in East Africa with those in Egypt, referred to a peculiar outbreak

of anthrax in that country. The old women of a village developed pneumonic anthrax, while the children contracted malignant pustule on the arms and legs. These were the only cases found, and all the other inhabitants of the village seemed to escape. The explanation of this curious distribution was found in the fact that the children collecting moist anthrax-infected dung for use when dry as fuel had contracted the cutaneous form of the disease, while the old women, employed in cooking at home, had inhaled the dust from the breaking up of the cakes of dry dung.

Dr. W. H. ANDREWS, commenting on the diseases of South Africa, mentioned a case in which a veterinary officer, at the commencement of a rabies outbreak, had toured the country warning the natives of the possible introduction of the disease and describing the symptoms they would be likely to notice in infected animals. Returning a year later to one village he found that such a dog had indeed been seen, and that the natives had promptly killed it by the simple expedient of setting all the other dogs of the village on to it.

SURGICAL TREATMENT OF PYLORIC STENOSIS.

A MEETING of the Section for the Study of Disease in Children was held on October 24th at the house of the Royal Society of Medicine, Dr. H. C. CAMERON, the President, being in the chair.

A paper was read by Mr. B. E. SCHLESINGER on the subsequent history of patients operated upon for pyloric stenosis, which was illustrated by an account of a continuous series of 37 cases. The Rammstedt method of operation was used in all these cases, which had been under the care of Dr. Thursfield during the past four years at the Hospital for Sick Children. Of the 37 patients, 12 died in hospital, 11 after operation, and 1 after five days' medical treatment; 3 patients were discharged as cured, 1 after surgical and 1 after medical treatment, but succumbed to intercurrent disease at intervals of a month to a year later. Four of the remaining 22 patients were untraceable; the other 18 had been examined during the past month. The first important fact noticed was that all these children had reached a high degree of general fitness: the testimony of the mother was always that the child had been unusually free from gastric disturbances. With regard to weight, the children under 1 year were at the present time under the normal, not having had time to make up their initial loss; but those about 15 months were from one to five pounds heavier than the average child. With regard to height, 7 patients were measured, and 6 were found to be from one to four inches taller than the average child of corresponding age. The supposition that this increase in weight and height was due to extraordinary care in the diet was apparently groundless, as 11 of the series were breast-fed, 2 were fed on cow's milk, and 4 on a preparation of dried milk. No particular method of feeding seemed to have any direct bearing on the development. All the children cut their first teeth at about 7 months and walked when they were 13 months. The stools were all said to be normal and there was no recurrence of the vomiting. A pyloric tumour was still palpable in 4 patients, one aged 6 months, two aged 3 years, and one 3½ years. The tumour had not given rise to any untoward symptoms. As further evidence of the slow subsidence of the tumour, a case was cited in which an autopsy was performed one year after the operation, the cause of death being tuberculous meningitis. The pylorus was found to be still thickened and adherent to the under surface of the liver. The old scar on the pylorus, though still visible, was becoming filled by partly fibrous and partly muscular tissue. The immediate operative mortality was still very high, being nearly 32 per cent. In all the cases of the present series pre-operative gastric lavage and infusion of saline were employed. Gas and oxygen was the anaesthetic used. Attention to pre-operative measures had reduced the mortality from 45 per cent. in 1920 to 13 per cent. in 1923, and it was interesting to note that the last 9 patients in this series had all been cured. Of the fatal cases, 5 deaths were due to shock and collapse a few hours after operation, 5 to subsequent enteritis, and one patient who appeared to be progressing favourably succumbed five days after operation. At necropsy, blood in the peritoneum was found on two occasions, and slight, or no relief of the stenosis in 4 cases. Medical treatment was adopted in 2 cases only; both patients died, one five days after the onset of treatment and the other from bronchitis three weeks after being discharged from the hospital apparently cured. *X*-ray examination for the purpose of diagnosis was found to be useless, if not misleading. With regard to the alleged association between pyloric stenosis and phimosis, some degree of phimosis was found in 10 of the 31 boys of this series.

Before the meeting the following cases were shown: (1) A case demonstrating the use of pituitary whole gland in chronic constipation, by Dr. Bernard Myers; (2) a case of congenital hypertrophy of both lower limbs, by Mr. Denis Browne and Mr. Twistington Higgins; (3) a case of coeliac disease with glycosuria, by Dr. F. J. Poynton; and (4) a case of "pink" disease, by Dr. Ruth Darby.

ENCEPHALITIS LETHARGICA.

AT a meeting of the Liverpool Medical Institution on October 23rd, Dr. GORDON GULLAN contributed a clinical study of sixty-two cases of encephalitis lethargica. After giving a short historical note of the disease he described various types and cases, with details of the onset, special symptoms and syndromes, sequelae, diagnosis, prognosis, and treatment.

In the ensuing discussion Dr. HENRY COHEN expressed surprise that pain was only present in one of the sixty-two cases, since in his own experience severe pain, probably of thalamic origin, was not uncommon. Pain frequently preceded the onset of myoclonus, and had given rise to the mistaken diagnosis of an acute abdominal lesion in some cases on record. Excessive classification was to be deprecated in view of the innumerable varieties of the disease encountered. Walsh's classification, in which the symptoms and signs were regarded as (*a*) evidence of general infection and toxaemia; (*b*) evidence of exaltation and depression of the nervous system, either general or local, was, on the whole, satisfactory, except that in it common manifestations—for example, the oculo-lethargic and myoclonic types—were insufficiently emphasized. In the differential diagnosis, meningitis, both tuberculous and syphilitic, could be excluded in most cases by examining the spinal fluid. Difficulty in diagnosis occurred occasionally in cases of sinusitis, especially frontal, and associated with brain abscess; also in cases of infective endocarditis of the cerebral type, uraemia associated with myoclonus, and post-diphtheritic paralysis. Papilloedema was so rare as to suggest intracranial neoplasm or abscess, and though undoubted fundus change occurred in epidemic encephalitis, it was rarely encountered and was slight in degree. Dr. Cohen considered the figure for complete recovery given by Dr. Gullan (50 per cent.) too high. He had been disappointed with regard to treatment of the sequelae, though he had found hyoscine hydrobromide useful in the Parkinsonian syndrome, luminal in myoclonic types with pain, and Lust's treatment helpful in cases presenting reversal of sleep rhythm. In his experience Pitcairn's method and magnesium sulphate injections were disappointing.

MEDICO-LEGAL SOCIETY.

THE opening meeting of the winter session of the Medico-Legal Society was held in London on October 21st. The President (Lord Justice ATKIN) took the chair, and Professor HARVEY LITTLEJOHN (Edinburgh) read two papers—one on judicial hanging and the other on strychnine poisoning.

Judicial Hanging.

Professor LITTLEJOHN advocated hanging as the most humane method of execution yet devised. The "short drop" employed by the former executioner Calcraft—2½ to 3 ft.—did not in every instance result in instantaneous death. This drop had also been employed in past days in the United States of America, and the results had been so unsatisfactory that the method of electrocution was substituted for hanging in that country. Marwood, who succeeded Calcraft, had employed the "long drop"—7 to 10 ft. or more—and while with this drop death was in all cases instantaneous, yet considerable risk was run of detaching the head from the body. The drop at present employed was about 6 ft., and fulfilled the purpose of causing instant

death without detachment of the head. In the past the knot had been placed under the chin or at the back of the neck, but now it was invariably placed either just behind the left ear or beneath the angle of the left side of the lower jaw. This position was most effective, causing dislocation at the upper part of the vertebral column between the second and third cervical vertebrae. The rope was usually three-quarters of an inch in diameter. Professor Littlejohn was acquainted with a case in which the time taken from the moment when the executioner appeared in the condemned cell to the moment of the drop was as short as 27 seconds. Painful scenes had no doubt occurred when proper precautions had not been taken to ensure that the trap-door worked easily, as in the case of John Lee, the Babbacombe murderer, when three attempts failed within half an hour, and the Home Secretary then granted a reprieve.

In the course of the discussion Sir William Willcox agreed that hanging was far more reliable than the method of electrocution adopted in the United States, where several cases of disastrous failure had been reported. Earl Russell suggested the introduction of coal gas into the cell in the course of the night when the condemned man was asleep; but the President said he could not imagine anything more horrible for the criminal than to know that on some unknown night he would go to sleep and that death as the result of the cell being filled with gas would occur before the morning. He would say nothing of the difficulties that would result if for any reason the unfortunate man failed to succumb, but if the man was told which was to be the night of execution he would probably be unable to sleep and would be quite slowly and consciously suffocated by the coal gas. On the whole the present method of execution seemed to be the best that could be adopted. Dr. Barlow and Dr. James Scott also spoke.

Strychnine Poisoning.

In his second paper Professor Littlejohn said that all the textbooks adopted Dr. Warner's statement that half a grain was the minimum fatal dose of strychnine for an adult. This was a very important question from the legal point of view in connexion with criminal cases, but there were comparatively few authentic records of the actual amount which had caused death. In such a body as the Medico-Legal Society it would be important if exact details could be placed on record. A fatal dose might be half a grain, but persons might recover from a large dose of 40 grains. In such cases, however, prompt remedial measures had saved the patient's life. At the time of Palmer's case the alkaloid strychnine was practically an unknown drug. There was no doubt that in the case of many drugs habitual administration might bring about tolerance; but it was impossible to ensure tolerance of strychnine whatever precautions might be taken.

In a short opening address to the Odontological Section of the Royal Society of Medicine, the President (Mr. J. G. Turner) called attention to two points which, he said, if not strictly professional, were at least of great professional importance. His first point was the use of what he described as slipshod English. In reading recent contributions to the Sectional proceedings he found six passages which to him were obscure. What would be the value of such contributions to the student of fifty years hence? His second point was a suggestion that to ease the dental curriculum a few members of the Odontological Section, chosen from practitioners and teachers, might draw up a schedule of knowledge, beginning with important facts and ending with theory, from which schedule a curriculum less costly in time and money might be evolved. The importance of this lay in the fact that the dental schools were not turning out dentists enough to supply the wastage of the 20,000 or so now on the *Register*; nor were those who could afford the cost of the present curriculum attracted by any but the highest class of dental practice. A curriculum might possibly be devised which would turn out a sound working dentist and would attract men likely to be content with the income of the smaller dental practices. If more dentists were not forthcoming the return of the unqualified practitioner was only a matter of time. Easing of the curriculum would lead to easing of the preliminary examination. As a teacher he would be content if the student showed a sound knowledge of the English language.

Reviews.

MNEMIC PSYCHOLOGY.

In February of last year a short article appeared in this Journal entitled "The mnemic principle applied to biology and psychology." It was really a review of a translation of *The Mneme*, by the late Richard Semon, published in 1911. I remarked that even if some of the premisses upon which the author has founded the mnemic principle applied to memory, habit, and heredity are unacceptable to most biologists, nevertheless the attempts made by Semon to associate these three fundamental conditions of living matter in one common principle cannot fail to have a profound influence upon psychology and biological science. The present work, entitled *Mnemic Psychology*,[1] is a translation by Bella Duffy of Semon's later work *Die Mnemische Empfindungen*, published in 1909. Vernon Lee, who has written a lucid and interesting introduction covering forty pages, takes upon herself the responsibility of giving it the title of "mnemic psychology," and justifies the action by claiming that it is essentially psychological, because the author does not refer to questions relating to the application of the mnemic principle to heredity, which is debatable and unacceptable to most biologists, as it implies transmission of acquired characters. Moreover, it is thought that the title "mnemic psychology" would be better understood by the English-speaking public. Semon himself published this work with a subtitle "First Continuation of Mneme," showing that it is a first instalment and elaboration of only a part of his original work.

A small volume of controversy on the transmissibility of individual modification and a posthumous fragment on the correlation of cerebral and mental phenomena (*Bewusstseins Vorgang und Gehirn Process*, Wiesbaden, 1920) were all that he left after the publication of *Mnemische Empfindungen*. Doubtless the war, coupled with the death of his wife at Easter, 1918, interfered with the continuation of his work. Three days after Christmas of the same year as the death of his wife he was found dead in his bedroom lying on a German flag: he had shot himself through the heart; grief and disappointment had been more than he could bear. Semon may be said, in his work, to have laid the foundation of a new and original line of thought in psychology.

Monsieur Ribot, in his interesting work *La Vie Inconsciente et les Mouvements* thus refers to Semon's work *Die Mneme*: "It is full of original ideas, but the terminology and neologisms discourage the reader"; it is a functional dynamic study, but of a metaphysical rather than of a psychological character. Many people will agree with this criticism of Ribot regarding the terminology and the introduction of neologisms, and in reading the work one finds a difficulty in having a connected train of thought owing to the unaccustomed psychological terms employed. It may be remarked, however, that the forty pages of the admirable introduction by Vernon Lee will help the reader considerably in overcoming this difficulty, by giving a general review of the whole subject in more comprehensible and simple language. There are many interesting chapters in this book in which are recorded experiments and observations relating to mnemic psychology and the theories of Semon which will be of interest to the psychologist. Pathological conditions are only touched upon, as the author had the idea of later continuing the work from a pathological standpoint. Regarding the terminology, one example may be taken: "Chronogenous localization of the engram store." The author by this infers layers of engrams occurring in successive periods of time, and he supports this theory by the fact of brain injury and concussion—such as was so frequently seen during the war—leading to retrograde and anterograde amnesia; thus—

"Those layers of engrams generated immediately before the accident are the most seriously injured, *i.e.*, as the later course of the illness shows, they are not destroyed, but entirely—or almost entirely—deprived of their power of ecphorizing (revivescence); the layers farther off from the accident in time, *i.e.*, those deposited

[1] *Mnemic Psychology*. By Richard Semon. Translated from the German by Bella Duffy. With an introduction by Vernon Lee. London: G. Allen and Unwin, Ltd. 1923. (Demy 8vo, pp. 344. 14s. net.)

longest before it, are those which change least, and the older layers, whose production has preceded the accident by months, have only sensibly altered in a very few cases."

This appears to be rather a mechanistic explanation.

After reading this work one feels that it is difficult and requires close study and application to obtain a clear conception of the author's philosophical deductions. However, the fact that so great a psychologist as Mr. Bertrand Russell (*Analysis of Mind*, p. 83) summarizes Semon's theory elaborately and adopts the essentials of his philosophical principles should be sufficient guarantee that the book is one that all interested in psychology should read.

F. W. MOTT.

THE INITIATION OF A PUBLIC HEALTH SERVICE.

To be called upon to construct an entirely new State health department where no organized central health agency had previously existed is a task which does not often fall to the lot of public health officers. As recently as 1919 this was, however, the experience of Dr. G. S. LUCKETT and Mr. H. F. GRAY in the State of New Mexico. They found at the outset some difficulty in explaining to local doctors their duties as part-time health officers, and it became necessary to issue special instructions to them which have been elaborated into a handbook published under the title of *The Elements of Public Health Administration*.[2]

The volume is planned on much the same lines as other textbooks on public health, though the introductory chapter on the relation of the health officer to the physician and to the public is a welcome innovation which might well be copied by other authors. The advice tendered in this chapter, if acted upon, ought to relieve the health officer of a great deal of worry and anxiety. Nothing could be more correct than the suggestion that at all times his relation with the profession should be "strictly ethical according to the accepted standards, which is nothing more than true courtesy." We cannot agree so heartily with the statement in a subsequent chapter that "the health officer ought to verify diagnoses." If this practice is carried out to any great extent in New Mexico it is to be feared that even the patience, tact, and courtesy which the health officers are told to exercise in the performance of their duties may fail to put them on the best of terms with their professional colleagues. This dictum should have been followed by one equally precise—"Only under the most exceptional and urgent circumstances should a health officer see the patient of another medical man except in the presence of or with the consent of the medical practitioner in attendance on the patient." Observation of this rule does more to ensure the harmonious and sympathetic co-operation of the general practitioner with the public health officer than is perhaps always realized.

The outlook of the authors is not that of pioneers but of men who, having a knowledge of the failures and successes of their predecessors, have the courage to adopt modern methods when convinced of the wisdom of such action. This attitude should appeal to the present generation of medical officers of health. Quite one half of the book is concerned with a consideration of the duties of a health officer in relation to communicable disease. When dealing with methods of transmission the authors state with emphasis that it is persons and not things that are of primary importance in the origin and spread of infection.

Although primarily written for the instruction of American public health officers, this handbook will be found by those connected with the public health service in this country to contain a great deal of valuable information.

HETEROPHORIA.

THE American ophthalmic surgeon is the apostle of the correction of errors in muscle balance; the subject is interesting, and one to which possibly too little attention has hitherto been devoted in this country, and so we welcome the little book by Dr. MARLOW on *The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test*.[3]

The author, who is professor of ophthalmology in the College of Medicine, University of Syracuse, has produced a book which is at once clear and well written, remarkably free from "Americanisms" in spelling and construction, and at the same time valuable—a book, in fact, which all engaged in ophthalmological practice will do well to study. The numerous charts and diagrams make it rather difficult reading, but they add much value to the book.

The author draws a parallel between the muscular spasm present to correct an error of hypermetropia or of hypermetropic astigmatism and the constant contraction of the external ocular muscles necessary to maintain single vision in cases of imbalance. His work is based on 700 cases: prolonged occlusion of one eye brings out startling errors of balance which would have been entirely missed or only partially estimated if the examiner had been content to complete the test, as is usual in this country, at the same sitting at which the refraction is worked out. Unless a cycloplegic is used there is a risk of underestimating the total hypermetropic error, and unless a prolonged occlusion test is done there is a risk that a large amount of exophoria or of hyperphoria or of both may be missed. We gather that the author considers occlusion should be maintained for a week. As regards treatment, the choice lies between exercises, the constant wearing of prisms, and operative treatment. Professor Marlow has not much faith in exercises, and holds that any improvement is, as a rule, only temporary; he is more satisfied apparently with the constant wearing of prisms. Of operative treatment he says that his "experience is not great enough to attempt any but tentative generalizations, but I am satisfied that the degree of error which it should be the aim to correct, or materially diminish, is that which is found in the post-occlusion test."

We are very doubtful whether partial tenotomy of the external recti advocated in marked cases of exophoria will find favour in this country, where the majority of ophthalmic surgeons seem to prefer to advance the opponent rather than to cut the tendon of a muscle, and so sever its original connexion with the globe. The author, perhaps, makes a little too much of his subject. At the same time we feel little doubt that in a certain number of cases his method of testing will give important results, especially in patients who complain of eye-strain which is not relieved by the correction of the error of refraction.

VACCINE AND SERUM THERAPY.

Two branches of medicine, often treated separately but having much in common, have been dealt with together by Professor D. W. CARMALT-JONES in his book *Organic Substances, Sera and Vaccines in Physiological Therapeutics*,[4] wherein organotherapy and vaccine and serum therapy are both described. Part I, occupied with organotherapy, forms less than a quarter of the book. Its five brief chapters deal successively with the functions of the ductless glands, the thyroid, the uses of adrenaline, pituitary extract, insulin, and minor products. Its purpose appears to be to record the legitimate and trustworthy applications of glandular therapy and to guide the physician in the use of these substances. Little space is given to general physiology: it is the practical application of this science on which the author concentrates. His recommendations are supported in many instances by quotations from books and medical journals and supplemented by an account of his own and his colleagues' experience. The greater part of the book is concerned with vaccine and serum therapy, and it is apparent that the author has been greatly influenced by Sir Almroth Wright and his school, to whose opinions he frequently makes reference. This

[2] *The Elements of Public Health Administration.* By George Sparr Luckett, A.B., M.D., and Harold Farnsworth Gray, B.S., M.S., Gr.P.H. Philadelphia: P. Blakiston's Son and Co. 1923. (Post 8vo, pp. 460. 3 dollars.)

[3] *The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test.* By F. W. Marlow, M.D., M.R.C.S.Eng., F.A.C.S. Philadelphia: F. A. Davis Company. 1924. (Demy 8vo, pp. vii + 96; illustrated. 2.50 dollars.)

[4] *Organic Substances, Sera and Vaccines in Physiological Therapeutics.* By D. W. Carmalt-Jones, M.D.Oxon., F.R.C.P.Lond., Professor of Systematic Medicine, University of Otago, New Zealand. London: William Heinemann (Medical Books), Ltd. 1924. (Demy 8vo, pp. viii+393. 15s. net.)

part of the book is prefaced with a chapter on immunity, and a useful section on specific diagnosis describing the means available for the diagnosis of infectious disease. Then comes the description of the preparation and standardization of vaccines and information about modified vaccines, such as desensitized and detoxicated.

The remainder of the book deals with serum therapy and tuberculin. The second part of the book maintains the same practical bent as the first part, and the whole book will be a useful guide to those who seek information on the uses of internal secretions, vaccines, and serums in the treatment of disease.

QUANTITATIVE ORGANIC MICRO-ANALYSIS.

IN ordinary analytical chemistry for the operation of determining the proportion of sodium in a specimen of sodium chloride a quantity of about 100 milligrams would be required. In micro-analysis one-third of a milligram is regarded as sufficient. It is declared that even with that minute quantity accuracy is possible with an error no greater than 0.2 per cent. How this remarkable performance has been made possible is described in *Quantitative Organic Microanalysis*[5] by FRITZ PREGL. What has been stated of sodium is an extreme case, but only two or three milligrams at most are needed for the determination of carbon, hydrogen, nitrogen, sulphur, and halogens when present as components of organic materials. Without the methods here described the wonderful achievements of recent times in the realm of physiological chemistry could never have been realized; many a substance which became the key to a critical conclusion was, even after great labour in its production, only isolated in a quantity of a few milligrams. A course of analytical procedure secure against error with a quantity of that magnitude could not be laid down from theory alone. The procedure had to be surveyed for the incidence and magnitude of all the errors possible. The first need was a special balance capable of weighing to about a thousandth of a milligram; the instrument having been constructed, it became necessary to try the situations in which it could be mounted, the kind of support on which it might rest, and to fulfil a number of other conditions to ensure its freedom from perturbation.

Instructions derived from the results of those trials and instructions of corresponding character dealing with the preparation and use of the combustion tube and other apparatus form the main theme of Dr. Pregl's book. The precautions indicated as necessary are eloquent of the difficulties met by those who undertook the survey of this unpromising field of work. The author has himself contributed the greater part of the experimental work by which this result has been attained; the book reveals the fact that he has himself experienced all the difficulties and probed the sources of error to their full depth. He has set forth with minute attention to detail the causes of disturbance to accuracy and the means by which they are to be avoided. It is not to be supposed that the book will enable a beginner to perform micro-analytical examinations without error until he has made many painstaking rehearsals. It is quite certain that all who would master these operations will be spared immeasurable pains by the help to be received from the author's description. The work of translation has been ably done, and the book contains much useful information which may be studied with advantage, as well by chemists devoted to other systems of analysis as by those more particularly concerned with microscopic quantities.

NOTES ON BOOKS.

IN *Aids to Physiology* Dr. R. A. KRAUSE,[6] lecturer in hygiene and physiology in the Heriot-Watt College, Edinburgh, has written a book for "the student who is presenting himself for examination." It is doubtful if this compilation can be of much use to anyone who has attended a full course of lectures on physiology and taken practical courses in histology, biochemistry, and practical physiology, for he will remember much more than this little work contains. In some respects it is not full enough for some of the examinations, in others it is dogmatic where the subject being treated of is still in doubt. As an example of this latter point we might allude to page 115, where it is stated that the secretion of pancreatic juice is entirely hormonic, whereas many physiologists still believe that certain nerve impulses can also influence the pancreas. The account of speech, which occupies two lines, contains no information beyond that which every educated layman knows already. It is stated that globulins "do not crystallize"; one of them has been made to crystallize by a special technique. There is no hint given that egg-albumen has been made to crystallize. The classification of epithelia is confusing; to speak at the present time of a nerve cell as "multipolar" is out of date. The misprint of "in" for "ion" on page 88 is unfortunate, while Ca.H.PO is not the formula for calcium hydrogen phosphate. Those illustrations which are purely diagrammatic are good, but a number of figures, such as that of the duodenum on page 111 and of a nerve ganglion on page 176, are far too sketchy to remind the student of anything.

The success of *Lippincott's Quick Reference Book for Medicine and Surgery*, by Dr. GEORGE E. REHBERGER, is shown by the appearance of a fourth edition[7] so soon after the publication of the third, to which we drew attention less than a year ago. The present edition has been well brought up to date, more or less considerable changes having been made in nearly fifty subjects.

[5] *Quantitative Organic Microanalysis.* By Fritz Pregl, D.Sc., Ph.D. Translated from the second German edition by Ernest Fyleman, B.Sc., Ph.D., F.I.C. London: J. and A. Churchill. 1924. (Roy. 8vo, pp. xv+190; 42 figures. 12s. 6d. net.)

[6] *Aids to Physiology.* By R. A. Krause, M.D., D.Sc. Second edition. London: Baillière, Tindall and Cox. 1923. (Fcap. 8vo, pp. viii + 255; 57 figures. 3s. 6d. net.)

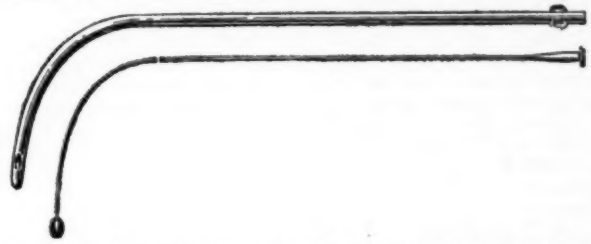
[7] *Lippincott's Quick Reference Book for Medicine and Surgery.* By George E. Rehberger, A.B., M.D. Fourth edition, revised. Philadelphia and London: J. B. Lippincott Company. 1924. (Sup. roy. 8vo; 151 figures. 65s. net.)

PREPARATIONS AND APPLIANCES.

Prostatic Catheter.

MR. JOHN F. BROMLEY, M.B., Ch.B., house-surgeon, Manchester Royal Infirmary, has devised a simple modification of the old-fashioned prostatic catheter for use in cases of acute retention of urine, due to the type of enlarged prostate which bleeds with extreme readiness, so that the attempt to draw off urine by a catheter, whether metal, gum-elastic, or even rubber, fails owing to blockage by long coils of blood clot.

The catheter (Mr. Bromley writes) is an ordinary metal prostate one—originally I used a No. 12 English—with a single eye, almost at the extreme tip. Down the hollow of the catheter is introduced a flexible metal stilette, on the end of which is fitted a pear-shaped bulb. This bulb fits the eye of the catheter exactly. The flexibility of the stilette allows the bulb to be introduced or withdrawn at will. The catheter, with bulb and stilette in place, is passed in the ordinary way. When the instrument is well in



position the stilette is withdrawn, thus opening the catheter eye. The required amount of urine can now be drawn off, and, if it is not desired to empty the bladder completely, the stilette can be replaced at the proper moment. I have found it a most valuable instrument, especially in cases of urgency. It may be argued that where technique is correct there should be no need for such a device. Cases do arise in which the bleeding is due quite as much to increased vascularity of the prostatic urethra as to any fault in the manipulation known as the *tour de maître*.

The instrument was made to my design by Messrs. James Woolley, Sons and Co., Ltd., of 76, Deansgate, Manchester. The stilette and bulb can, if desired, be used with a gum-elastic coudé catheter or with a soft rubber one.

"Soloid" Benedict Test.

We have received from Messrs. Burroughs Wellcome and Co. a very convenient set of "soloids" (compressed chemicals) for the performance of the Benedict test for sugar in urine.

The test simply consists in dissolving two "soloids" in 1.8 c.cm. of hot water, adding four drops of urine, and boiling for two minutes. The test will detect the presence of 0.1 per cent. sugar in the urine. The qualitative testing of urine for sugar is thus reduced to extreme simplicity.

The apparatus is designed for use by patients themselves, and any educated patient ought to be able to perform it himself after half an hour's instruction. Medical men also will find the tabloid set extremely convenient for their own use. The "Soloid" brand Benedict test (qualitative) is issued in cartons, containing twenty-four pairs of products, with directions for use.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

(*Continued from page 780.*)

The fourth sitting of the Royal Commission on Lunacy Law and Administration and Mental Disorder, which took place on October 22nd, with the Right Hon. H. P. Macmillan, K.C., in the chair, was devoted to evidence given by magistrates as to the work done by them under the Lunacy Acts.

Evidence of Magistrates.

Sir John Barnsley, magistrate for the city of Birmingham and deputy-chairman of the visiting justices of that city, brought forward certain suggestions and recommendations which had been made by the Birmingham justices at a special meeting.

In reply to the Chairman, he said that as a rule he had no difficulty in signing a certificate for detention. The alleged lunatics were seen either at his own residence, or, if they had been taken into custody, in a private room at the police station. One of the recommendations to which he attached considerable importance was that if a doubt existed in the mind of the justice as to the condition of the person concerned, a preliminary observation in some place other than the workhouse or asylum—an observation clinic—should be compulsory. He entirely agreed with the Chairman that it should be a place to which there would be a right to send persons of any social position, whether they could pay or not, and that the additional expenditure involved might be fully recovered, inasmuch as such a procedure would probably obviate the necessity of sending a number of cases to asylums. Charges might be made for treatment, and the institution or clinic could serve as a centre for giving advice and assistance to outside cases. It should also be possible for patients to enter the institution voluntarily for a period of treatment without any detention order having been given. If such voluntary cases had dangerous tendencies some form of compulsory detention would have to be adopted, and naturally such tendencies would be manifest prior to treatment. As to visitation, the witness thought that some independent authority should, on the lines provided under the Mental Deficiency Act, periodically visit and report upon all persons detained under the lunacy laws. All patients should be visited at the end of the first year, again at the end of the second year, and subsequently every five years. The rota for visitation under the Mental Deficiency Act was so arranged that one magistrate saw the same person each year, and could therefore note the progress that was being made. It would, of course, be necessary to enlarge the judicial authority and increase the number of visitors if that method was adopted.

In reply to the Chairman, who said that he had some difficulty in seeing how the visitor would decide that a case was one which ought to be liberated, Sir John Barnsley explained that he did not suggest that the visitor should have power to do anything more than to report to the Commissioners that he had visited the case, and that in his opinion, which was that of a layman, the patient might safely be discharged. It would then be for the Commissioners either to accept that view or to give reasons why, in their judgement, effect should not be given to it.

The next witness was Mr. W. H. Lord, magistrate for the city of Birmingham, who expressed his agreement with Sir John Barnsley with regard to observational treatment. He confined his evidence to the admission of patients. He remarked that it was his practice to interview alleged lunatics in the cab in which they were brought to his house by the relieving officer. With regard to the medical certificates submitted to him, he had had no occasion to doubt them. He was of opinion that it would be well to give pauper cases the same standing as private cases in the respect that a second certificate should be required. Answering a question with regard to treatment, the witness said that in a large number of cases the proceedings and treatment were often too long delayed. He was under the impression that treatment prior to the stage at which certification could take place might prove to be remedial.

Sir Robert Walden, magistrate for the County of London and chairman of the visiting magistrates for the county, agreed that personal contact between the justice and the alleged lunatic was a great advantage, though it did not exist when private patients were admitted. He had had occasion to differ from medical men, and had refused to sign certificates; he had referred certain cases back for further observation. He knew he had the right to call in another medical practitioner to inquire into such cases, but if they were difficult he would rather have the advice of an expert. With regard to provisional or experimental treatment, he was in favour of the establishment of a "hostel," under the management of an expert neurologist, assisted by trained nurses having psychological and other certificates, who should be able from time to time to report on the case. To such a home suspected cases could be sent before a certificate was issued, and he thought that, there being no connexion with the workhouse or asylum, there might in many instances be a better chance of recovery. There might be two such institutions—one north and the other south of the Thames. In reply to the Chairman, he said that he thought quite half of the cases under provisional detention would benefit so greatly from the quiet and treatment as to effect a complete recovery. He added that from his experience, gained by frequent personal visits to London mental hospitals, he had found in some instances a certain amount of justification for complaints made by patients with whom he was conversing, though frequently the complaints were not substantiated. Naturally, patients had the feeling that they were being detained although sane, but in such cases inquiry was always made. Asked for his views with regard to the institution of some independent tribunal of investigation, the witness said that this was a difficult point, but there were borderline cases on which it might be desirable to consult an expert.

Sir Humphry Rolleston said that he had been much impressed by the stress laid on the desirability that the judicial authorities should be highly experienced men and the medical men specialists. He asked the witness whether he thought that justices should be specialized with regard to mind diseases in the same way as coroners with regard to investigation into the causes of death. Sir Robert Walden said that this was desirable, but, he feared, impossible. It would necessitate paid authorities. With regard to the medical man, the medico-psychological certificate should be held by all those dealing with such cases. After-care was another very important matter, but it was at present left entirely to voluntary agencies.

Earl Russell asked the witness if he thought it desirable that there should be instituted in England the practice prevalent in Scotland of boarding out suitable cases in villages. The witness replied that provided both the cases and the foster-parents were carefully selected that might prove a desirable course in certain instances.

Councillor C. F. Sanders, magistrate for the city of Cardiff, said he had no difficulty in regard to certifying cases. He was, of course, bound to rely on the certificate of the medical men. He did not understand it to be his task to examine a patient and satisfy himself from his own observation as to whether that patient was sane or insane.

The Chairman: Are you not thereby very much reducing the value of the personal interview?

Councillor C. F. Sanders: I may be slightly reducing it, but I should say, judging from my own experience, that there is little danger on any such ground as that. I should be very much surprised to find that any person has been committed to a mental hospital in Cardiff without due cause, speaking of the cases which come under my own observation—technically pauper cases.

Continuing, the witness said that in the course of the past two years as many as 333 cases had passed through his hands, out of which number 58 had been discharged without a certificate having been granted. The Chairman said that it would be interesting to know on what grounds proceedings were dropped in the 58 cases. Councillor Sanders replied that they were dropped for various reasons, a large proportion of the cases having been brought in suffering from delirium tremens and the taking of methylated spirits, whilst others apparently suffered from severe depression which had come on suddenly, but which, after a short rest, had passed off. Many were not pauper cases, though he supposed in the legal sense they became such directly they had entered the workhouse. He had had but little experience of private cases. Questioned as to visitation, he said that when a patient had been certified and removed to an asylum he had frequently visited the case in his capacity as a member of the visiting committee. There was sufficient accommodation in Cardiff for all cases arising in the area. Asked by the Chairman whether he had any suggestions to make as to the necessity for further safeguards for personal liberty, Councillor Sanders replied that he did not think anything arising out of his experience pointed in that direction.

The Chairman pointed out that there were differences of procedure, according to the evidence, between Birmingham and Cardiff. Whilst Councillor Sanders had said that in nineteen cases out of twenty which he had before him, he called for written statements from relatives and friends as to what they knew of the alleged lunatic, Mr. Lord had said that he made no inquiry as to whether the patient had either relatives or friends. In Cardiff, again, but not in Birmingham, the workhouse was used almost invariably as an original place of detention and as a place where the justice might visit the patient.

The next meeting of the Commission will be held on November 4th.

British Medical Journal.

SATURDAY, NOVEMBER 1ST, 1924.

PRESERVATIVES IN FOOD.

THE final report of the findings of the Departmental Committee on Food Preservatives, a summary of which will be found at page 828, is of a drastic nature, and the recommendations will, if acted upon, mean the practical suppression of preservatives in food. The medical members—Professor W. E. Dixon, Dr. J. M. Hamill, Professor F. Gowland Hopkins, Dr. G. R. Leighton, Dr. A. P. Luff, and Dr. Charles Porter—represent varied experience, interests, and points of view, and the unanimity of the Committee's findings (apart from dissent on one point by Sir Daniel Hall) should carry much weight with Parliament and the responsible authorities. The evil of using drugs to preserve food substances has, we believe, been steadily growing in recent years, and it has become increasingly difficult to obtain food supplies free from these substances. From time to time, after some particularly objectionable case has been exposed in the law courts, such as the discovery of an excessive amount of boracic acid in sausages or sponge cakes, a public outcry is raised, but the matter quickly fades from memory and the evil continues. As Samuel Johnson observed, "It is difficult to disturb the system of life," and this holds good even of a system which has grown up in comparatively recent times.

They order this matter better abroad. In many respects Britain is far behind other European countries and America. The law in many of these countries consists of a general prohibition of the sale of articles of food containing injurious substances, and often lays down specific regulations for the preparation of articles of food. Of course, if it could be shown that preservatives were entirely lacking in harmful properties something might be said for retaining them, though the Committee points out that they may be used to mask unsound food or to avoid proper care and cleanliness in the preparation of sound food. But these preservatives are not harmless. Boracic acid, which is the chemical most commonly used, is cumulative; a single dose is not completely excreted for about five days; and, as the general public probably take from three to fifteen grains of this substance daily in their food, it is not too much to say that their tissues are never free from it. One of the witnesses who gave evidence on behalf of the British Medical Association told the Committee that in some individuals quite small doses of boracic acid may produce gastric irritation, and that there is evidence that boracic acid tends to produce albuminuria and may have injurious effects on persons suffering from nephritis.

We entirely agree that the evil likely to result from the haphazard consumption of preservatives in food is certain to be enhanced in those suffering from renal disease, and that it is essential for the medical man to know the nature and amount of added preservatives in foods which his patients may be consuming. Cream, butter, margarine, sausages, brawn, potted meat, potted fish, bacon, ham, pickles, sauces, coffee extract, lemon curd, jellies, dried fruits, cakes, and beverages of various kinds may all contain preservatives, and it is not difficult to understand how the substance gets into the system. When it is remembered that this cumulative substance (boracic acid) may perhaps be taken for a lifetime, who is to say that even in the healthiest of people it may not lead to serious sickness? In invalids and children it is well known that boracic acid is not well tolerated, and may lead to distressing symptoms—often after only a few doses. For these reasons we think the Committee is right in recommending the prohibition of the use of so insidious a substance as boracic acid. If the Committee's recommendations are put into effect all the dairy products sold in this country should in the future be free from preservatives.

The only preservatives which the Committee proposes should be allowed in the future are benzoic acid and the sulphites—substances which are relatively harmless according to evidence at present available. Moreover, these chemicals are to be permitted only in beverages and in sausages. Even in those instances in which reasons are given for permitting small amounts of approved preservatives it is recommended that each article of food or drink shall bear a label stating the nature and amount of the preservative used. In principle this seems to meet the case exactly. But the matter bristles with practical difficulties. Such a stipulation might inflict hardship if its enforcement led the public to assume that the prescribed label carried with it a stigma. For instance, the Committee is unanimously agreed as to the desirability of allowing jam-makers to preserve surplus fruit with sulphur dioxide rather than to discard it; but the manufacturers in that event must append a label, whereas no label is necessary for jam not made from fruit, so that the genuine article would be penalized. The manufacturers of fruit juices who, for example, use the natural lime or lemon with sugar, and who supply it to the public in sealed and sterile bottles, must use a preservative, otherwise fungus growth and fermentation will occur in the bottle twenty-four hours after it is opened; synthetic lime juice, made perhaps from essential oil, citric acid, and saccharine, requires no preservative; so here again the genuine article would be penalized. Bottled beer brewed and aerated by the Neville rapid method has no added preservative, yet it invariably contains a trace of SO_2 from extraneous sources, and to protect themselves brewers would require to label their bottles. We venture to think that it may be to meet cases such as these that the Committee recommends that if the declaration of the preservative is likely to cause undue harm, without compensating advantage to the consumer, exceptions to the requirement might be made by the Minister of Health.

The report leaves us with the impression that all the recommendations made can be carried out to the advantage of the public, and with the approval of the medical profession, without any increase in the cost of the food. The Committee deplores the absence of adequate facilities for refrigeration and cold storage in this country, and of adequate accommodation for cold transit by the railway companies. In this respect Great Britain is very far behind the United States—for one reason because that country has cheap petrol and water power, both of which we lack. With sufficient provision for the cold storage and transport of perishable foodstuffs many of the existing arguments for the use of preservatives would fall to the ground.

GALL STONES AND CHOLECYSTECTOMY.

Gall stones, whether discussed with wit and wisdom or treated with soap pills and crab-claw powder, can only be cured by operation, or they will accompany their victims to the grave. The aggregate amount of pain that calculi of all sorts have caused humanity must be colossal. Often the pangs of calculous colic—unexpected, sudden, and useless—are more acute and more prostrating than those of childbirth, because more terrifying to the sufferer. Throughout his Lloyd Roberts Lecture, printed at page 795 this week, Sir John Bland-Sutton's polished shafts go winging in a manner that would have caused the founder of the lectureship many a quiet chuckle. The present lecturer has always been an upholder of the unities, and in that respect he is a true member of the classic school. He cannot think of calculi in one organ without thinking of those in others, and that leads him on to pearls (and beauty), and to enteroliths in cows and snakes; but he never wanders far from his main subject, and his sal Atticum has a savour and a utility all its own.

In moments of enthusiasm it is perhaps well to bear in mind that the accepted treatment of one age is often the quackery of the next. Before laughing too heartily at the absurd therapeutics of orthodox physicians of the eighteenth century it may be prudent to reflect on some official remedies of to-day and wonder what the Medicine of the future will find to say of them. Our forefathers, like ourselves, were at least groping after the truth, and soap, given by them for gall stones, is in fact a solvent of cholesterin, though a feeble one. It is possible, too, that the addition of the more florid constituents of the bygone prescription was but the early and picturesque contribution of a mind alive to the place of suggestion in treatment.

Sir John Bland-Sutton's plea for cholecystectomy falls to-day on more receptive ears than it would have done twenty years ago. The stream flows with him, and cholecystectomy is firmly established on its own merits. The practice of this operation is admittedly no less beneficent in the acute forms of gall bladder disease than when infection is of slight intensity. But it is worth remembering that in some countries the unchallenged popularity of cholecystectomy has sometimes led to disaster. The manner in which the distended gall bladder pushes down from the hilum, overshadowing the neck and drawing a film of liver tissue incompletely with it, tends to obscure the depths of the wound. Here again a large stone will often be found, the cause of the obstructive cholecystitis. The walls are thick and sodden, the neighbouring areas oedematous. The unskilled surgeon—and the skilful but unpractised surgeon too—may do irreparable harm in a few moments in this deep wound, injuring ducts and (though more rarely) vessels. It is necessary, therefore, to proselytise with discretion. The skilled and practised surgeon stands in no need of advice here. The occasional surgeon will do well to remember the classical advice that a cholecystectomy should always be done, provided that it does not add to the risks of the operation, nor detract from the prospects of survival, of recovery. It is indeed true—it has been proved in other countries—that one of the chief risks in an operation may be the operator himself. So much, then, for cholecystectomy and the occasional surgeon.

There is an interesting historical reference, in Sir John Bland-Sutton's lecture at Manchester, to Lord Lister's advice against operating for gall stones. It would seem that Lister apprehended rupture of the abdominal wound, most probably resulting from imperfect suture material, defective technique, or slight unhealthiness in the operation wound. His observation was true enough; the lax abdominal parietes left after the removal of tumours rarely burst open however thin the walls might be, because tension had then decreased. The silk and silkworm-gut stitch through all layers appears to have afforded very fair results before it gave place to the modern suturing in layers. Whether the almost universally used and fashionable stay-suture, ensheathed in rubber tubing or tied as a "cracker-dressing" over gauze, really helps much has been questioned. Some surgeons hold that if these sutures are placed deeply enough to warrant their title, they cut through the soft muscle rapidly and do more harm than good. Sutures placed in muscle are apt to be treacherous: dense and avascular fascias are the structures to seek and to bind. Given average technique and good materials burst wounds are rare; but they come to every man at times when Nature, for some unknown reason, fails to respect the tacit bargain which the surgeon makes with her.

WILLEM EINTHOVEN.

The Nobel Prize for Medicine for 1924 has been awarded to Dr. Willem Einthoven, professor of physiology in the University of Leyden. Physiologists and physicians all over the world, especially those interested in the problems of the heart, will welcome the news and regard this as a well deserved honour. The invention of the "string galvanometer" has been a wonderful gift to physiology and medicine—perhaps the greatest, in the elucidation of the action of the heart in health and disease, since Laënnec's discovery of the stethoscope. Kölliker and Müller in 1856 first demonstrated the presence of a current of action in the heart by means of a frog's nerve-muscle preparation. Later, in 1887, the late Professor A. D. Waller showed that the human heart beat could be detected and registered by means of the capillary electrometer. This instrument, however, was relatively insensitive, and Waller did not realize the remarkable possibilities of his discovery. Professor Einthoven, who had for some years been interested in the electrical phenomena associated with the heart beat, introduced his string galvanometer in 1903, and it rapidly gained universal acceptance. Its sensitivity surpasses that of all other galvanometers, and, in its present form, the ease and rapidity with which curves can be obtained render it an unrivalled instrument of precision. The human electrocardiogram, from the usual three-limb leads, can be registered on a photographic plate with an accuracy expected in an animal experiment, but rarely found in clinical medicine. Most large hospitals the world over possess an Einthoven galvanometer as an essential part of their equipment; many physicians employ it regularly in their practice. The clinical examination of the heart is hardly complete without an electrical examination, while it is wellnigh impossible to explain to students the various disorders of the cardiac rhythm without the help of electrocardiograms. The debt of medicine to Professor Einthoven is clearly shown by reflecting on the remarkable advances that have been made during the last fifteen years by means of his galvanometer in the elucidation of the cardiac mechanism, both normal and abnormal. In these researches he has himself been a laborious worker, and has made many and important contributions. Most of Sir James Mackenzie's patient work found convincing proof. In 1909 Lewis, Rothberger, and Winterberg simultaneously demonstrated the common occurrence of auricular fibrillation in man. The site of origin and mode of propagation

of the normal heart beat are now known in minute detail; sites of new impulse formation in auricle or ventricle can be accurately located; different forms of tachycardia and bradycardia are distinguished with ease and certainty; lesions hitherto unsuspected, such as those of the branches of the bundle of His, have been revealed. Without the aid of this galvanometer Sir Thomas Lewis's brilliant proof that auricular flutter and fibrillation result from the "circus phenomenon" of Mines would not have been possible. Professor Einthoven has many friends in England, and he is no stranger to this country. In 1912, and again in 1921, he lectured before the Royal Society of Medicine. Only last year, in connexion with the eleventh International Physiological Congress at Edinburgh, he received the honorary LL.D. degree. British workers, headed by Lewis and his school, have reaped a rich harvest from his sowing, and no warmer greetings and congratulations will reach Professor Einthoven on his latest honour than those from his friends and colleagues in this country.

SUBCUTANEOUS CELLULITIS IN MINERS.

At the instance of the Mines Department, the Medical Research Council undertook an inquiry into miner's "beat knee," "beat hand," and "beat elbow"—the names given to forms of subcutaneous cellulitis which result from the miner's occupation.[1] Miners, though their general mortality is low, suffer more from occupational diseases which are subject to compensation than any other industrial workers. The three diseases investigated do not equal in numbers afflicted the cases of miner's nystagmus; but the cases of either beat knee or beat hand reported each year far exceed those in any other disease subject to compensation, while cases of beat elbow are nearly as numerous as all cases of industrial lead poisoning. The inquiry was undertaken by Professor E. L. Collis and Dr. T. L. Llewellyn to see whether better means of preventing the afflictions could be suggested, and whether the need for knowledge called for new research work. To judge from their conclusions it would appear that the investigators do not consider that further research work is needed. The incidence of the diseases should be reduced by better observance of existing means of prevention, and by the extension of facilities for cleanliness. The diseases, which are described as an acute localized inflammation of the deep layer of the skin, subcutaneous tissues, or underlying bursa, are due to repeated trauma, directly connected with the method of work. They are especially liable to occur in conditions of lowered vitality, "softness" after absence from work or in new-comers, and sepsis or skin infection in the neighbourhood of the affected part or elsewhere. The site of the cellulitis is determined by the lowered vitality produced by constant pressure. The knee or elbow is affected in accordance with the position adopted by the miner in the particular seam he is working, while the hand is injured by hard coal or by using picks with rough handles. It is probable that the soddening of the skin produced by working in wet seams is an additional cause of the diseases. Contributory causes are deficient cleanliness, the practice of wearing a garter round the trousers below the knee, the use of unsuitable knee-pads, and the neglect of small scratches and abrasions through which micro-organisms may gain access to the tissues. Although the incidence of the diseases is great, their duration, fortunately, is not lengthy. In beat knee and beat elbow the course of the disease is usually uneventful, and complete recovery of function may be expected in less than six weeks. In beat hand severe infection may lead to involvement of the tendon sheaths and destruction of the tendons. The crippling effects of an untreated or badly treated whitlow or beat hand may, as the investigators suggest, be more serious than the results of a compound fracture of the femur. Beat hand usually ends in suppuration; and as soon as pus is present an incision should be made on the palmar surface, even though the local signs are more marked over the back of the hand. Occasionally fatal results from septicaemia following one or other of these diseases have been recorded. The conclusions of the report are: (1) That repeated trauma should be guarded against, and its results minimized as far as possible. (2) That the skin should be kept clean and the general health good. (3) That properly equipped first-aid stations, with skilled surgical advice, should be available. (4) That lines of defence should be strengthened by the abolition of garters and constricting bands below the knee; the use in thin seams of suitable knee-pads; attention to the smoothness of pick handles; the erection of pithead baths as soon as possible at collieries where thin seams are worked; improvement of first-aid stations under medical supervision, and a spread of knowledge concerning the importance of their use.

[1] Medical Research Council. Report on Miners' "Beat Knee," "Beat Hand," and "Beat Elbow." By Professor E. L. Collis, M.D., M.R.C.P., and T. L. Llewellyn, M.D. London: H.M. Stationery Office. 1924. Price 1s. 6d. net.

TESTING THE SOBRIETY OF MOTOR DRIVERS.

For two years the police in Copenhagen have adopted the plan of submitting cases of alleged drunkenness in motor drivers to a medical examination by a doctor specializing in this branch of forensic medicine. This task fell to Dr. J. Fog of the Medico-Legal Institute of the University of Copenhagen, and his earlier experiences with fifty cases of alleged drunkenness have already been briefly referred to in our columns.[1] In his most recent communication[2] he states that from June, 1922, to June, 1924, he examined 200 cases of alleged drunkenness in motor drivers whose conduct had aroused suspicions as to their sobriety and had brought them within the purview of the police. These 200 cases were classified according as they were drunk (43), slightly under the influence of alcohol (121), or sober (36). Dr. Fog considers this last figure expressive of leniency: some of the 36 may well have taken sufficient alcohol to disturb their balance and judgement, but it was considered advisable in borderland cases not to venture on a verdict likely to be upset in the event of an appeal. Only three of the drivers were under the age of 20, and only six were over 50; sixty-five drivers were classed as "private persons," the remainder being professionals. Analysis of the cases according to the hour of the day or night that they occurred brought out the interesting fact that the frequency with which Copenhagen motor drivers fall into the hands of the police on the suspicion of drunkenness varies greatly from hour to hour. It might have been thought that as most motoring is done in daylight most of the arrests would occur between 8 a.m. and 8 p.m.; but only 71 of the men whom Dr. Fog examined came before him during these twelve hours. Amongst the night hours, the two-hour period 12 to 2 a.m. was the one most crowded with medical examinations, 42 (or 21 per cent. of the total) being made at this time. At first about forty-five minutes were required for each examination, but with practice Dr. Fog has found it seldom necessary to spend more than half an hour on each case. His original plan was to conduct a tête-à-tête examination-interview with the alleged drunken driver, who, he thought, would be less embarrassed by a dialogue conducted in strict privacy than by one to which a third party was witness. But, largely with a view to the possibility of appeals, Dr. Fog has found it wiser to have a third person present in the room—though in plain clothes rather than in uniform. If such a person is ostensibly

[1] British Medical Journal, December 29th, 1923, p. 1269.
[2] *Ugeskrift for Laeger*, October 2nd, 1924, p. 733.

engaged in some routine clerical task he is not likely to upset a driver attempting to show unimpeachable sobriety. It should be noted that a certain proportion of Dr. Fog's cases were of the recurrent, perennial type; within less than four months he had to examine the same driver three times, the consecutive verdicts being sober, sober, and slightly under the influence of alcohol. This was a case in which reckless driving was complicated by a luxuriant vocabulary, the volume and quality of which had aroused the suspicions of the police.

INFANT MORTALITY IN SOUTH AFRICA AND NEW ZEALAND.

The wide difference between the infant mortality rates in South Africa and New Zealand—80 and 40 per cent. respectively—has prompted Dr. J. J. Boyd of Pretoria to investigate the question whether the comparison that has been made between the health and welfare work in the two countries, with unfavourable comments in the case of South Africa, is at all justified. A paper read by him on this subject before the South African Medical Congress of 1924 is published in the *South African Medical Record* for July 26th (p. 321), the case of European infants alone being considered. Dr. Boyd doubts whether the methods employed by Dr. Truby King and his followers in New Zealand are of general applicability, and draws attention to certain fundamental factors in the problem of infant mortality which operate quite apart from any health or welfare work. Pointing out that a high birth rate is more apt to be accompanied by a high infant mortality than is a low birth rate, he remarks that, whereas the average European birth rate in the South African Union for the period 1911-18 was 29.8, during this period in New Zealand the corresponding figure was 25.5, and in later years it was still lower. The social standing of the parents, connoting superior intelligence, a healthier environment, and greater care, has a definite influence on infant mortality, and it is pointed out that whereas in New Zealand the "poor white" is a comparatively rare person, in South Africa this class contributes very appreciably to the infant death rate. General climatic conditions, the rural environment of the majority of the population, and the relatively more restricted use of native nurses, are also said to be important factors in the favourable position of New Zealand. With the help of a detailed statistical report it is claimed to be proved that New Zealand at no time in its history has experienced such high infant mortality rates as those prevalent in South Africa down to the end of the nineteenth century, and that in both countries since 1904 there has been an approximately equal fall of 50 per cent., which is largely attributable in both countries to other factors than the teaching of mothercraft. Moreover, figures are quoted to show that several South African towns have already attained infant mortality rates little, if at all, inferior to the average New Zealand town. With no desire to minimize the good work of Dr. Truby King and the Plunket nurses, which commenced about 1908, Dr. Boyd suggests that the benefit can hardly have been generally appreciable before 1912. In the period 1871-75 the death rate in New Zealand was 107 per 1,000; in 1883-92 it was 87; in 1893-1902, 82; in 1904-8, 71.45; and in 1909-12, 59.16. Other factors, such as housing and sanitation, were obviously concerned, therefore, in the reduction, and it would appear hardly justifiable to claim that the Truby King system was the sole, or even the principal, factor to be considered. The author produces much statistical information in support of his views, including reports from ninety-three small towns in South Africa, as well as from the more densely populated areas; he insists that "without a proper foundation in the shape of good sanitation in the broadest sense of the term a great deal of mothercraft teaching will be useless. The people will not be in a position to profit by it." He does not deny that the Truby King system appears to be very successful and well worth study, but urges that other methods also require energetic application. In the *South African Medical Record* for September 27th (p. 429) Dr. A. Simpson Wells discusses Dr. Boyd's statements, and points out that the active work in New Zealand on the lines laid down by Dr. Truby King commenced officially in 1907, though active propaganda had been in progress during the previous two years. The fall in the New Zealand infantile death rate might, therefore, be definitely attributable to this welfare work. Dr. Wells gives a detailed account of the methods in New Zealand, and urges that these must be adopted in South Africa with necessary adaptations.

BRETONNEAU.

In his presidential address on Bretonneau, his life and work, recently delivered before the Section of the History of Medicine of the Royal Society of Medicine, Dr. J. D. Rolleston said that Pierre Bretonneau (1778-1862) was a remarkable personality whose services to medicine could be summarized as follows. In the first place he established the specificity of diphtheria and typhoid fever. At the beginning of the nineteenth century the whole subject of sore throat, including its different varieties and its relation to croup, was in a state of confusion. Bretonneau's great achievement was to have shown the identity of malignant angina and croup, and to have differentiated malignant angina from all other forms of sore throat, mainly by its progressive course and contagious character. The identification by Bretonneau of malignant angina with croup was established as follows: (1) by elaborate researches into the morbid anatomy of the disease, by which he showed that the membrane in the fauces was continuous with that in the larynx and trachea; (2) by clinical observation, by which he proved that the angina, if left to itself, almost invariably tended to attack the larynx, and thus give rise to symptoms of croup; (3) by chemical examination, by which he proved the identity in composition of the membranous deposit in the fauces with that in the larynx and trachea; (4) by the study of the works of the earlier writers. A considerable part of his second memoir on diphtheria, which he read before the Académie de Médecine in 1821, is taken up by quotations from Aretaeus and the Spanish and Italian writers in the seventeenth century, as well as from Ghisi, Starr, and Bard in the eighteenth century, to show that the disease started in the fauces and finally attacked the trachea. The prevailing ideas on the continued fevers were in much the same chaotic condition as those held regarding the different forms of sore throat. As in the case of diphtheria, Bretonneau succeeded in establishing the specificity of typhoid fever, not only by a careful clinical study, but also by numerous autopsies. Bretonneau's next achievement was his doctrine of specificity, by which he foreshadowed the germ theory of disease. This doctrine is now so well established that it is one of the commonplaces of medicine, but it has only comparatively recently become so, and in Bretonneau's time was vigorously opposed by Broussais, the leader of the "physiological" school, who stigmatized as "ontologists" those who studied medicine from this point of view. In opposition to Broussais, who had discarded the materia medica and reduced treatment to bleeding, leeching, and a starvation diet, Bretonneau made several valuable contributions to therapeutics. Apart from the introduction of tracheotomy for laryngeal diphtheria and a new method of administration of quinine in malaria, described by Trousseau as a happy combination of the methods of Sydenham and Torti, he was the first to employ belladonna in constipation and enuresis, resuscitated the use of purgatives in dysentery and of martial prepara-

tions in anaemia, and was the first to introduce cod-liver oil into France for the treatment of rickets. Lastly, his work, especially his researches on diphtheria, shows the practical value of the study of the history of medicine.

THE MEDICAL HISTORY OF LOUIS XIV.

MUCH has been written about the health of Louis XIV; nearly all of it is derived from the *Journal de Santé du Roi* kept by his physicians Vallot, d'Aquin, and Fagon. Dr. D. E. H. R. Deguéret has gone over the story again in his thesis (*Thèse de Paris*, 1924, No. 169), and it may be interesting to recall some of the points he brings out. Louis was born with two teeth which caused some injury to the breasts of his wet-nurses, for, until the appearance of Rousseau's Emile, it was not fashionable for royal personages or court ladies to suckle their children. His first illness occurred at the age of 9, when he contracted small-pox, for which he was bled four times as well as purged. The attack, though severe, does not appear to have disfigured him. At the age of 17 he had gonorrhoea, which was attributed by the courtly Vallot to congenital local weakness aggravated by riding on horseback. During the campaign in Flanders at the age of 20 he fell ill with typhus, for which he was treated by purges and emetics in the form of antimony. Five years later he had a severe attack of measles, his recovery from which was celebrated by an ode composed for the occasion by Racine. From this time onward the journal of his health makes frequent allusions to attacks of giddiness, headache, and "vapours." There does not appear to be any evidence for attributing these symptoms to the presence of a tapeworm as has been suggested; they were most probably due to indigestion caused by a voracious appetite, defective dentition, and his habit of bolting his food. Dr. Deguéret is inclined to the view that the frequent purgation to which the monarch was subjected acted beneficially and enabled him to attain the age of 77. In 1681 the unskilful removal of a tooth was followed by a naso-palatine fistula, for which he underwent cauterization on several occasions; the final result was successful. Five years later he developed fissure of the anus, for which he was operated on by the surgeon Félix in the presence of d'Aquin and Fagon. Louis appears to have submitted to operation on each occasion with considerable fortitude. He had attacks of intermittent fever between the years 1686 and 1695, due to the presence at Marly of indigenous malaria; he was successfully treated with quinine by d'Aquin. Save for these attacks and a carbuncle from which he suffered in 1696, the principal illnesses Louis experienced during the last thirty years of his life were gout and renal calculus. The cause of his death was senile gangrene. Dr. Deguéret pays a tribute to the devotion of the king's physicians, whose constant attentions enabled him to attain an advanced age in spite of the deplorable hygienic circumstances in which he lived.

THE BENJAMIN WARD RICHARDSON LECTURE.

THE Model Abattoir Society was founded in 1886 by Sir Benjamin Ward Richardson. It aims at the substitution of public abattoirs in the place of private slaughterhouses. It seeks to encourage the use of rapid and humane methods of slaughtering animals, and to remove all those influences which lead to unnecessary suffering of animals prior to slaughter. Besides educational and propaganda work, which the society carries on throughout the year, it arranges each autumn for a Benjamin Ward Richardson Memorial Lecture to be given in London. The first lecture was delivered in 1922 by Sir William Collins, who took as his subject "Benjamin Ward Richardson: the man and his work as a sanitarian and humanitarian." Last year Sir Arthur Newsholme lectured on "Humane slaughtering and the public health." This year's lecturer, Dr. Chalmers Mitchell, selected as his theme "Hygiene in animal food: evidence from the Zoological Gardens." He spoke at the Royal Society of Medicine on October 23rd, and Sir James Crichton-Browne presided at the meeting. Dr. Chalmers Mitchell described the methods adopted for the slaughtering of animals required for food at the Zoological Gardens For large animals such as horses they use the rifle, which experience has shown to be a most expeditious and humane method of killing. In the course of more than twenty years a second shot has been necessary only on two occasions. Dr. Chalmers Mitchell considers the rifle preferable to any "humane killers" which he has seen. The suffering of animals prior to slaughter is almost altogether due to fright at the strange and unexpected surroundings. Fright is greatly increased by rough handling, and the method of electrocution, which is advocated by many, although offering a painless death, is open to the objection that it necessitates much handling of the animals, and is therefore likely to be attended with suffering. He does not find much to choose between the rifle, the pole-axe, the humane killer, or the knife in the hands of experts: used with skill each may result in a swift and painless death. It is the preliminary arrangements and not the actual lethal agent which account for the brutality of common methods of slaughtering, and reforms should aim at the avoidance of discomfort and fright in the hours prior to the actual killing. Dr. Chalmers Mitchell believes that animals have no foreknowledge or presentiment of death, and are not frightened by the presence of dead bodies or by the smells of the slaughterhouse. He gave many observations from his own experience to prove this point. On the other hand, all animals have a great fear of unfamiliar faces, voices, and handling: their skin in particular is extremely sensitive to an unaccustomed touch, which may cause extreme fright. They are reassured by the sight, sounds, and smell of other animals—facts which point to the need for homely surroundings in the accommodation provided for the animals at the abattoir prior to slaughter. Turning from the deaths to the lives of animals, Dr. Chalmers Mitchell made some interesting observations on the diet and housing of inmates of the London Zoological Gardens. He pointed out that the intestinal tract of primitive mammals was adapted for an omnivorous diet, and that man, though highly specialized in other directions, has retained this primitive type of alimentary tract. Herbivorous and carnivorous animals have a specialized intestinal tract, resulting not only in an alteration in design, but enabling them also to assimilate food quite repugnant to omnivorous feeders. Thus, carnivorous animals, such as lions and tigers, are able to digest and enjoy putrid flesh, which would be repulsive to omnivorous animals. The aim of the management of the Zoological Gardens is to keep the animals as happy and comfortable as possible, and improvements are constantly being made in accordance with the advancement of scientific knowledge. It has been found that few warm-blooded animals remain healthy in an environment where everything is arranged for them so that they can never exercise the freedom of choice. To avoid this, housing is being arranged so that animals may choose between outside air and shelter, and new methods of ventilation are being installed to avoid "stuffiness" of cages and to allow plenty of fresh air. Animals suffer also from lack of sunshine, due to being deprived of ultra-violet radiation. To secure this a new experimental house is being constructed with a special glass roof which will allow the ultra-violet rays to penetrate into the interior. Certain of the houses are to be lighted also with special electric light providing ultra-violet radiation. In such ways as these the disadvantages of captivity are being balanced by a share in the enjoyment which comes from the progress of scientific knowledge.

THIRD INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

During the war the allied nations instituted surgical conferences in which joint rules were formulated for treatment, so that all the wounded might profit by improvements achieved by the individual countries. After the war the Belgian Army Medical Corps convened a congress at Brussels in order to perpetuate this fruitful scientific collaboration, and two years later another congress was held in Rome. The third international congress is to be held in Paris from April 20th to 25th, 1925, at the Val-de-Grâce—the cradle of army medicine. The following questions have been put down for discussion: Technical specialization as the basis of field medical service work; methods for selecting the military contingent; etiology and treatment of traumatic arthritis and its sequelae; methods of analysis of dressing and suturing materials. Tests and demonstrations will simultaneously be arranged of technical equipment formed into field sanitary units, and an industrial and commercial exhibition is being organized. The entertainments include official receptions and a gala night at the Paris opera, and excursions have been arranged in connexion with the congress to the spas and climatic cure stations of France. All past and present officers of the army or navy medical corps of an allied, associate, or neutral nation are invited to the congress, together with their wives and daughters. The subscription is 30 francs for men and 20 francs for ladies, and application should be sent in before December 1st, if possible, and in no case later than February 1st, addressed to the Commissariat du Congrès, 66, rue de Bellechasse, Paris (VII). Uniform should be worn at the inaugural sitting, official receptions, and fêtes, and is optional during the congress. Reductions in railway fares have been arranged, and a committee has been organized to provide information about lodgings.

The Bradshaw Lecture before the Royal College of Physicians of London will be delivered on Tuesday, November 4th, by Dr. F. J. Poynton, on "The prevention of acute rheumatism." The Mitchell Lecture, as stated last week, will be given on November 6th, by Sir StClair Thomson, on "Tuberculosis of the larynx and its significance to the physician." The FitzPatrick Lectures will be given by Dr. Charles Singer on November 11th and 13th, on "The history of anatomy." The lectures will be delivered at the College, Pall Mall East, at 5 o'clock. Any member of the medical profession will be admitted on presentation of his card.

Nova et Vetera.

THE MEDICAL INTEREST OF CASANOVA'S "MEMOIRS."

"Every properly constituted man of letters," wrote Mr. Havelock Ellis, "has always recognized that any public allusion to Casanova should begin and end with lofty moral reprobation of his unspeakable turpitude," a fact which, aided by ignorance of the French language, prevents Casanova from securing a wide circle of readers in suburban England; at the present rate of exchange, his complete memoirs, six volumes of them, cost less than a couple of the psycho-neurotic sexual fantasies of popular novelists which encounter little or no moral reprobation. The suburban neglect of Casanova is compensated by the assiduity of serious readers, and there can be few aspects of his life and character which have not been closely investigated. In 1917 Dr. J. D. Rolleston published in *Janus* a detailed study of Casanova's medical history; Dr. Rolleston has focused the information Casanova provides respecting his various illnesses, mostly, of course, venereal, and also contrives to throw light upon the conditions of medical practice in the eighteenth century. This light is at times lurid; thus Dr. Rolleston remarks that the contract between a Venetian courtesan, named Ancilla, and her doctor "should be read as an interesting example of medical deontology in the eighteenth century." The contract was to the effect that before the doctor, one Lucchesi, should receive payment for his (mercurial) treatment, he must give a very convincing practical testimony to his belief that a cure had been effected. When it came to the point, the doctor declined to fulfil the condition, and sued for his fees. The court decided in his favour on the ground that the condition was void as criminal in nature. Casanova says—thereby displaying ignorance of English law—that had the suit been brought in England, where, according to him, any agreement is enforceable, Ancilla would have won.

Casanova speaks with respect of two eminent medical men, Haller and Tronchin, but he has little good to say of their profession, although, like other satirists of the faculty, he usually called in a doctor when he was really ill. He employed a medical man in six of the eleven attacks of venereal disease which he records. Speaking of Tronchin, Casanova mentions a report that he had cured a phthisical patient of a venereal disorder by means of the milk of an ass which had been inuncted with mercury. Dr. Pernet's comment on this passage is that "Tronchin was evidently a smart fellow. It is a difficult job administering mercury to phthisical patients, and one has to go slowly and tread carefully in treating syphilis in such. Rather than subject the patient to direct mercurial inunctions, which might have killed him, Tronchin wisely chose a *pons asinorum* way to get over the problem, an unusual way I admit, but rather original."

Casanova was, as Dr. Rolleston remarks, the more ready to criticize the faculty because he was himself an amateur physician, usually combining simple treatment with mystical humbug. All his life he dabbled in magic, and his reiterated contempt for his dupes does not altogether remove the suspicion that the Prince de Ligne's sneer—Casanova believed in nothing except the incredible—was well founded. Casanova was indeed much less acute than he supposed; often enough he played the part of Dryden's Duke of Buckingham, and in London the self-confident adventurer was plucked as easily as Lord Frederick Verisopht.

The *Mémoires* have been described by an eminent critic as "one of the greatest autobiographies," but the medical reader may suggest that this is a trifle ecstatic. It is not our province to discuss the literary style, although we wonder whether a Frenchman would rate it high, but it seems to us that a really great autobiography can only exist when the character described is remarkable and the skill in self-analysis consummate.

Casanova, we are philistine enough to think, was not a remarkable character. We have all met many Casanovas: men blessed with strong constitutions, physical courage, quick parts, much self-confidence, and few scruples. Few of them indeed have rubbed shoulders with so many famous people and none of them have described their erotic adventures in such detail—we make this latter statement with reserve, since before it is in print Dr. Stekel of Vienna may have produced two or three more volumes of the *vie intime* of his patients. But Casanova's conversations with celebrities consist mostly of smart impertinences and well merited snubs, while it is possible to be bored by the description of sexual intercourse.

We should say that the defenders of religion and morality, instead of loftily reprobating Casanova's moral turpitude, would have done better to use him as a horrid example. He had his good hours no doubt, but there were many bad hours, and the scornful picture of the last years of the greedy, boastful, quarrelsome old pensioner, drawn by the Prince de Ligne, is not that of a worldly success. Horace and Mr. Pepys were not perhaps better moralists, but they were better philosophers and far better autobiographers.

MEDICAL WOMEN'S JUBILEE.

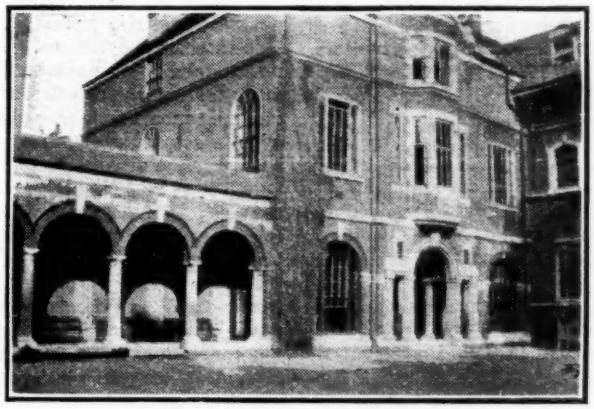
LONDON SCHOOL OF MEDICINE FOR WOMEN.

THE service of thanksgiving to commemorate the jubilee of the London (Royal Free Hospital) School of Medicine for Women was held at St. Paul's Cathedral on Saturday afternoon, October 25th. Princess Beatrice and Princess Arthur of Connaught were present.

The struggle entered upon fifty years ago by the founders of the first medical school for women in the British Empire resulted, not only in the admission of women to the medical profession, but also opened the door to all branches of work wherein women could prove their ability to take a more active part than hitherto in the body politic.

Thanksgiving Service in St. Paul's.

The long procession which entered the cathedral was composed of the President, Dean, and Warden of the school, the President and Secretary of the hospital, the heads of departments of both school and hospital, and representatives of most of the phases of work in which women now participate—women's medical service in India, nursing and allied services, women's colleges, the teaching profession, women civil servants, and social service workers. The occasion was regarded by earnest thinking women as one of unique importance. A more representative gathering of women workers could not well be imagined, and every seat in the great cathedral was occupied. The processional hymn was St. Patrick's Breastplate, set to an ancient Irish hymn melody.



London School of Medicine for Women.

During the service the following words were read by the Archdeacon of London (the Venerable E. E. Holmes):

"Through the ages there have been women in spirit born before their time. They had vision and faith, and by their toil and sacrifice, by their persistence and courage, opportunities for women in training, work, and service have been won. Three pioneers opened the doors of medicine to women: Elizabeth Blackwell, Elizabeth Garrett Anderson, Sophia Jex-Blake. With love and reverence our hearts turn to them."

The sermon was preached by the Bishop of Lichfield (the Right Rev. J. A. Kempthorne, D.D.) from the text "I beseech you that ye walk worthy of the vocation wherewith ye are called." The service was brought to a close with Elgar's Imperial March as a concluding voluntary, played by members of the London Symphony Orchestra conducted by Dr. C. Macpherson, organist of the cathedral.

Guildhall Dinner.

By the kindness of the City Corporation the Jubilee Dinner was held in the Guildhall on the evening of Friday, October 24th. Dr. Mary Scharlieb occupied the chair and remarked that English people never felt satisfied that any undertaking could be launched, blessed, or completed without its friends and promoters sharing a meal.

Gog and Magog (writes our representative, a former student of the school) have looked down unmoved upon many historic scenes, but certain it is that they have never before beheld some five hundred medical women enthusiastically acclaiming their President and Dean, in turn, as "jolly good fellows"! It was with sincere gratitude we paid our tribute of remembrance to the three pioneers, and with earnest enthusiasm we approved the suggestion to endow three chairs at the school—in anatomy, physiology, and pathology—to bear their honoured names.

The toast of "Women's Work" was proposed by the Very Rev. the Dean of St. Paul's, who, after saying many delightful things about the work of women, added that he himself still thought that the highest occupation for women was to be found in the home. Lady Barrett, in reply, reminded us of the old days of suffrage processions when the cry hurled at us was "Why don't you go home and mind the baby?" And yet, in the last session of Parliament a woman member was obliged to bring in a bill to allow women to have the guardianship of their own children. Mrs. Fawcett, LL.D., who also responded, commented on the general ignorance concerning the number of medical women now in practice. A relative of hers had remarked that he intended going to St. Paul's "to help the women along." She then told him that there were 2,000 medical women, of whom over 1,100 were graduates of the London School.

Professor E. A. Gardner (Vice-Chancellor of the University of London), who proposed the toast of the London (Royal Free Hospital) School of Medicine for Women, said that it was particularly appropriate that London University should be associated with this toast. The foundation of the Women's Medical School in 1874 was given the seal of academic approval when the University, in 1878, accepted from the Crown a supplemental charter making every degree, honour, and prize offered by the University accessible to students of both sexes on perfectly equal terms. It was thus the first academic body in the United Kingdom to admit women as candidates for its degrees, and by so doing it had grasped a great opportunity.

Miss Aldrich Blake, M.S., the Dean of the School, in her reply, stated that although after fifty years' service the school is still free from debt, it was desirable in the interests of future students to endow three chairs, and at the same time commemorate the founders of the school. The Dean then presented to Mr. Langton, chairman of the Royal Free Hospital, a roll containing the names of new subscribers and donors secured by past and present students during the jubilee year.

Professor Winifred Cullis, in proposing "The Chairman," remarked that Mrs. Scharlieb combined the traditions of the past, the achievements of the present, and the inspiration of the future. Mrs. Scharlieb, in replying, bade us consider the founders of the school, its friends, and its future. The two first had been proved worthy, and, in spite of occasional murmurings to the contrary, she felt confident of the last.

Congratulatory telegrams were read from Miss Penrose, Principal of Somerville College, the Glasgow Medical School for Women, the Scottish Branch of the Medical Women's Federation, and one from Dr. Poonen, a former student of the school, and now occupying a high official position in her native country, India. The band of the Royal Regiment of Artillery played delightful selections during the dinner.

Evening Party at the School.

A very delightful evening party was given by the present students at the school on Saturday, October 25th. After the reception by the Dean simultaneous entertainments and demonstrations were given in various theatres, and there was no lack of amusement. In the buzz of conversation on

all sides one heard continually the question, "What are you doing now?" And the answer was just as often, "Looking after my own children" as "Working at so-and-so"—perhaps more often a combination of the two—thereby showing that Dean Inge's wish that all the ladies at the Guildhall banquet should not be vowed to celibacy was already fulfilled.

Women who were unable to participate in the celebrations will gladly learn that, in spite of alterations in staff, new buildings, many generations of new students, the atmosphere at the school is still a "happy" one.

It is fitting to conclude with a word of thanks to all who so excellently organized the jubilee celebrations, especially the Secretary and Warden, Miss L. M. Brooks.

PRESERVATIVES AND COLOURING MATTERS IN FOOD.

THE DEPARTMENTAL COMMITTEE'S REPORT.

As briefly announced in our last issue, the Committee appointed by the Minister of Health to inquire into the use of preservatives and colouring matters in food has now issued its final report.[1] The members of the Committee are Sir H. C. Monro, K.S.B. (chairman), Professor W. E. Dixon, M.D., F.R.S., Sir A. Daniel Hall, K.C.B., F.R.S., Dr. J. M. Hamill, Professor F. Gowland Hopkins, M.B., F.R.S., Dr. G. R. Leighton, Dr. A. P. Luff, Dr. Charles Porter, Mr. P. A. Ellis Richards, and Mr. G. Stubbs. Its terms of reference were:

"To inquire into the use of preservatives and colouring matters in food, and to report—

(1) Whether the use of such materials, or any of them, for the preservation and colouring of food, is injurious to health, and, if so, in what quantities does their use become injurious:

(2) Whether it should be required that the presence of such materials, and the quantities present, in food offered or exposed for sale should be declared."

The Committee has heard a very wide range of opinions, on both the medical and the commercial sides of the problem, from medical officers of health and public analysts, physicians, pharmacologists, chemists, and a great number of persons connected with the trades which would be affected.

This is not the first Committee which has investigated this subject. In 1889 a Committee was appointed, with Sir Herbert Maxwell as chairman, "to inquire into the use of preservatives and colouring matters in the preservation and colouring of food," but its report led to no direct action. Nevertheless, since 1899 a series of regulations relating directly or indirectly to food preservatives have been made by the Local Government Board. In 1908 and 1909 respectively the Public Health (Foreign Meat) Regulations and Amending Regulations were made; in 1908 the Public Health (First Series, Unsound Food) Regulation; and in 1912 the Public Health (Milk and Cream) Regulations, to amend which an Amendment Order was made in 1917.

Most foreign countries have legislation on this subject; in many cases this consists of a general prohibition of the sale of articles of food containing injurious substances, together with specific regulations relating to processes of preparation of articles of food. For example, every country or state which has legislated prohibits the use of fluorides and formaldehyde as a preservative. In Sweden boron preservatives are absolutely prohibited; in Australia, New Zealand, and Canada they are permitted specifically in certain dairy products only, while their use is apparently tolerated to some extent in Holland. Sulphur dioxide is commonly permitted in wine, beer, cider, and non-alcoholic drinks, and preserved and dried fruits; but not in meat products, except in Australia and New Zealand. Salicylic acid is permitted in a few instances, sometimes as a substitute for sulphur dioxide.

The Committee does not include in the word "preservative" such substances as salt, saltpetre, sugar, vinegar, acetic acid, alcohol or spices, or the minute quantities of preservative agents introduced by the process of curing known as "smoking," or substances such as saccharin. It draws attention to the fact that preservatives may be used to mask unsoundness in food due to one cause or another, or be a cloak for careless or inexpert methods of production, storage, or distribution.

Great Britain differs from other European countries in that a large proportion of the food is imported, much of it from very long distances, and on arrival at the ports has to be distributed to all parts of the country. The facilities for distribution, the provision of cold storage and cold transport are far less than in some other countries, notably the United States, no doubt because we have no cheap source of energy.

Boracic acid, which is tasteless, is the most commonly used of all preservatives, and occurs in many different foods, so that considerable quantities may be taken by the general public daily; and as a single dose is probably not completely excreted for five days (although half the amount taken may be excreted in twelve hours) the tissues are never free. The Committee thought that the prohibition of boric acid as a food preservative, in force in many countries, is justified. It regards benzoates as amongst the least harmful of preservatives because the evidence as to their deleterious effects is negative. It is careful to point out, however, that the investigations have so far been confined almost entirely to healthy people, and suggests that irritant effects too slight to influence normal people may yet affect disadvantageously invalids and sick people, more especially those suffering from intestinal and renal trouble.

Sodium sulphite in the amounts employed in foods has no specific toxic action, since it is rapidly converted into sulphate in the tissues. Nevertheless, the Committee does not regard it as harmless, for if food is taken daily which contains sulphites, the sulphur dioxide liberated in the stomach may cause dyspeptic symptoms. In most countries, even when sulphites are permitted in certain foods and beverages, they are strictly forbidden for meat, one reason being that the putrefactive odour of decaying meat can be removed by treatment with sodium sulphite and the bright red fresh appearance restored; that is to say, the preservative may be employed to conceal the condition of the meat.

A representative of the British Medical Association, Professor A. J. Clark, who appeared before the Committee, gave it as his opinion that the following substances should be forbidden as food preservatives: formaldehyde and fluorides, because they are definitely toxic; borax preparations on account of their cumulative action; and salicylic acid and salicylates on account of their powerful physiological action.

For practical purposes the commonly used preservatives are classified in the following groups, according to their relative degrees of undesirability, Group I being the most undesirable.

Group I. Formaldehyde and fluorides.
Group II. Boric acid and salicylic acid and their derivatives.
Group III. Benzoic acid and sulphurous acid and their derivatives.

Preservatives are used at present in a haphazard way and sometimes as a trade practice, or even in ignorance. Often no effort has been made to do without them. Even in cases in which the plea that preservatives are indispensable has been put forward by responsible firms or persons, it was ascertained that other firms acting under similar conditions had been enabled to do without them; and, where experts have agreed that a preservative cannot be discarded, the divergence of views as to the minimum necessary for safety suggests that finality has not been reached.

Preservatives are largely used in butter, cream, imported liquid eggs, margarine, sausages, potted meat and potted fish, and some beverages, while boric acid is used for packing bacon and hams for export to this country, and is occasionally dusted over these articles of food in this country. Even such excessive amounts as 175, 140, and 110 grains per pound of boric acid have been found in margarine, butter, and bacon respectively. Nevertheless, it is pointed out that in normal circumstances the figures do not exceed and rarely amount to 35 grains per pound, or 0.5 per cent.

Salicylic acid and salicylates are found in a number of articles in regular consumption, chiefly beverages. The occurrence of this preservative in solid food is not common, though as much as 17 grains per pound has been found in

[1] Final Report of the Departmental Committee on the Use of Preservatives and Colouring Matters in Food. London: H.M. Stationery Office. 1924. Price 1s. 6d. net.

sausages. It has been found in beverages to the extent of 13 grains per pint in some wines. The amounts considered necessary by the trade vary between 5 and 8.75 grains per pint for lemon squash, lime juice cordial, and non-alcoholic fruit wines and cordials, 1 and 3 grains per pint in brewed ginger beer, and 2 and 3.5 grains per pound in coffee extract, while 1.75 grains per pint has been suggested as being necessary in mineral waters. Sulphurous acid and sulphites are extensively used in beer and alcoholic wines, to some smaller extent in non-alcoholic beverages, and in preserving fruits and fruit juices, dried fruits, gelatine, and sausages. This preservative is also commonly used by butchers and by game and poultry dealers. In beer and wines, and in fruit and fruit juices, the introduction comes partly from the treatment of the vessels of preparation and storage, partly from the materials used, and partly from the direct addition of preservative in the course of manufacture or treatment for storage. In the treatment of meat in shops it is applied in the form of a wash on the surface of the meat. In sausages it is mixed with the other ingredients.

It is pointed out that preservatives in milk are prohibited by law, and the Committee sees no sufficient reason why the sale of cream should not be conducted along lines similar to that of milk. The solution of the problem of dispensing with preservatives in cream consists in giving appropriate care to preparation and the provision of suitable methods of transport, storage, and distribution. It is similarly recommended that after a period of two years' grace the addition of any preservative to butter should be prohibited. The Australian and New Zealand trade, with possibly the Argentine as well, is the only quarter in which any difficulty is to be apprehended, and from both the former countries a considerable quantity of butter is already being sent without preservatives. There is no reason to regard the supplies of home-made and of imported margarine in this country as of a more perishable nature than butter. On the contrary, a well made margarine keeps fully as well as, or even better than, butter, and it is therefore recommended that the addition of preservatives to margarine should be prohibited.

Sausages clearly present a difficulty. The recognized brands often have long distances to travel, and they form an important source of food for the poor. It is recommended that sulphurous acid—either in solution or as normal or acid sulphite—should be permitted up to a maximum of not more than 3 grains calculated as sulphur dioxide (SO_2) per pound. It is emphasized, however, that the addition of preservative to sausages is undesirable and should be regarded as a concession to trade necessities as they exist at present. Improvements in methods of preparation, storage, and distribution should eventually enable preservatives in sausages to be dispensed with.

The use of preservatives for the packing or dusting of bacon and hams is not considered necessary; cool accommodation merely is required, which would be equally available and suitable for cargoes of other kinds, and it was ascertained from the companies that such accommodation can readily be provided to meet all requirements. Regarding "boracized" eggs, imported in great quantities from China and employed so largely by pastry cooks, the Committee has no hesitation in recommending that the use of preservatives in liquid eggs should be prohibited; it suggests that the importation of liquid eggs preserved by freezing only would furnish an adequate means of supplying all the demands which are at present met in part by the importation of boracized eggs.

Preservatives should be unnecessary in alcoholic wines of ordinary strength; there may be circumstances, however, which render the entire elimination of preservatives impracticable for the present. For this purpose it is recommended that sulphur dioxide should be permitted, but in amounts not exceeding 3 grains of sulphur dioxide, free and combined, per pint. Non-alcoholic beverages, on account of the sugar which they contain, are liable to fermentation, although this is inhibited to some extent by the carbon dioxide with which they are aerated. It is recommended that benzoic acid only should be permitted, and that 1 grain per pint should be adequate.

The Committee urges that the present defective methods of transport cannot justify the use of preservatives: any steps taken in the direction of limiting or controlling preservatives should create a pressing demand for improved arrangements and will be effective in securing them. It recommends that when preservatives, such as are permitted, are used they must be declared in a prescribed manner.

The report also deals with colouring matters in foods; these we shall not refer to except to note that copper is condemned for the greening of vegetables. On this point the Committee states that "The evidence which has been accumulating as to the pharmacological action of copper in small but repeated doses is disquieting." The report ends with certain suggested amendments of the law which will be required if the findings of the Committee are put into effect.

For purposes of reference we print the following summary, giving the proportions of allowable preservatives recommended by the Committee.

Preservatives [as defined] should be prohibited in all articles of food and drink offered or exposed for sale, whether manufactured in this country or imported,
except that

(A) Sulphur dioxide only should be permitted
- (i) in sausages in amounts not exceeding 3 grains per pound;
- (ii) in jam in amounts not exceeding 0.3 grain per pound;
- (iii) in dried fruit in amounts not exceeding 7 grains per pound;
- (iv) in preserved (but not dried) whole fruit or fruit pulp in amounts not exceeding 5 grains per pound;
- (v) in beer and cider, whether in bottle or in cask, in amounts not exceeding 5 grains per gallon;
- (vi) in alcoholic wines, non-alcoholic wines and cordials, and fruit juices, sweetened and unsweetened, in amounts not exceeding 3 grains per pint;

(B) Benzoic acid only should be permitted
- (i) in coffee extract in amounts not exceeding 3 grains per pound;
- (ii) in non-alcoholic wines and cordials, and sweetened and unsweetened fruit juices (as an alternative to sulphur dioxide) in amounts not exceeding 5 grains per pint;
- (iii) in sweetened mineral waters and in brewed ginger beer in amounts not exceeding 1 grain per pint.

The method of estimating the foregoing preservatives should be prescribed by the Minister of Health.

The sale of any preparation as a food preservative or for use in such circumstances that it may be introduced into food should be declared illegal unless such preparation (*a*) bears a description clearly indicating its composition and strength; (*b*) is free from impurities, and in particular contains not more than 1/100th part of 1 grain of arsenic per pound or more than 1/7th part of 1 grain of lead per pound.

THE HOSPITAL FOR SICK CHILDREN.

Plans for a Research Department.

The Hospital for Sick Children, Great Ormond Street, London, has recently reorganized its pathological and biochemical work, and the laboratory staff has been increased by the appointment of a biochemist and assistant pathologist. New rooms have been fitted up as laboratories, since the previous accommodation was altogether inadequate for the volume of laboratory work which such a modern hospital sends to the pathological department. But even with these recent extensions the space allotted for this vitally important branch of the hospital work leaves the workers in cramped quarters, compels them to work in rooms not designed for chemical and bacteriological investigations, and provides no room for a special research department. At present the laboratories are only just large enough for the carrying out of the routine work of the hospital; for research work and post-graduate laboratory study no accommodation is available.

To meet this need the hospital committee, acting on the advice of the medical staff, is appealing for funds in order to build a new research department. A public meeting was held at the hospital on Thursday, October 23rd, to discuss plans. Mr. John Murray, the vice-chairman of the hospital, recalled the many improvements which he had witnessed in the hospital equipment during the thirty-eight years of his association with its management. A hospital which wished to keep up to date must be continually making additions to its special departments for the diagnosis and prevention of disease: such enlargement added a heavy financial burden, as witness the fact that in 1886 the amount paid in salaries was £2,500, whereas last year it amounted to £17,500. Mr. Murray read a list of some of the larger

donations to the new research department, and acknowledged in particular the generous gift of £2,000 from the Prudential Insurance Company.

Dr. G. F. Still declared that one of the main objects of the foundation of the hospital by Dr. Charles West, in 1852, was the study of the diseases of children with a view to their better understanding and treatment. Great Ormond Street hospital soon became a centre of enlightenment to which doctors, students, and patients travelled from all parts of the world. He instanced a number of researches undertaken in the hospital, particularly the investigation of infantile scurvy, and stated that there was scarcely a single disease of childhood which did not owe some step in its elucidation to work carried out at the Hospital for Sick Children. New methods of investigation were now essential for the diagnosis of disease. Bedside skill was no longer sufficient in itself: it must be supplemented with aid given by the pathologist and biochemist. It was essential that the hospital should have a thoroughly equipped research laboratory for the study of the nature and cause of children's diseases.

Dr. F. J. Poynton expressed the opinion that the Great Ormond Street hospital should not be looked on as a local hospital or even merely as a London hospital: it was essentially an international hospital and a universally respected centre of authority in all matters relating to the health of children. A danger existed that unless the hospital was provided with much more extensive laboratory accommodation it would not be able to preserve the eminent position it had hitherto occupied. The research which the hospital staff wished to commence would be of benefit to all, and Dr. Poynton thought that the view should always be kept well to the fore that the hospital existed not only for the children in the neighbourhood, but also as a centre of enlightenment for the whole civilized world. The sum of £50,000 was needed for the building and endowment of the research department at which the hospital committee aimed.

Dr. D. N. Nabarro recounted some of the notable advances in medical treatment which had followed from laboratory research. He showed a series of lantern slides illustrating the treatment of rickets by cod-liver oil and ultra-violet rays, and spoke of the discovery of insulin and its revolutionizing effect on the treatment of diabetes. But much more still required to be done. Nearly 80,000 children under 5 years of age died in England and Wales during the year 1923, and of this number more than 52,000 were infants under the age of 12 months. Rheumatism in particular was a disease which demanded investigation. In 1922, as Sir George Newman had pointed out in his annual report, 372,000 insured persons sought advice from their insurance practitioners for rheumatic diseases, and £1,800,000 was paid annually to, and 3,141,000 weeks of work were lost annually by, insured workers on account of rheumatic diseases. The weeks of work lost were equivalent to the work of 70,159 persons. In acute rheumatism it had been shown that nearly 50 per cent. of patients had either enlarged or septic tonsils, and the relation of these conditions to rheumatism was a fruitful field for research. A singular instance of the important place which rheumatism occupied amongst children's diseases was illustrated by the fact that on October 24th, 1924, out of a total of 92 medical in-patients in the Hospital for Sick Children there were 9 cases of endocarditis, 11 cases of chorea, 4 of rheumatic fever, and 2 of arthritis, making a total of 26 cases. Thus over a quarter of the medical cases in the hospital were rheumatic in nature. As further example of the heavy toll which rheumatism took of life and health, he quoted from the report of the chief medical officer of the Ministry of Health for the year 1923, to the effect that in that year 56,886 persons died from diseases of the heart, many of these being rheumatic in origin. He appealed for the establishment of a new research department for the study of the prevention of disease. The hospital needed more laboratory accommodation and more laboratory workers.

At the close of the meeting the visitors were invited to inspect the existing pathological department and the new biochemical laboratories, the wards, and out-patient and electrical treatment departments.

BRITISH TRADE IN MORPHINE AND HEROIN.

The following table has been issued by the Home Office to show the effect on British trade in morphine and heroin of the restrictive measures imposed by the British Government under the Dangerous Drugs Act, 1920, in fulfilment of the International Opium Convention of 1912.

Years 1910 to 1923.

Year.	1. Quantity of Morphine and its Salts Manufactured.	2. Quantity of Morphine and its alts Exported.	3. Quantity of Heroin and its Salts Manufactured.
	oz.	oz.	oz.
1910	486,975	—	10,272
1911	406,877	208,544	3,785
1912	425,408	276,560	3,034
1913	564,035	406,160	11,665
1914	735,628	504,016	12,249
1915	926,743	295,568	29,756
1916	1,033,162	225,616	26,761
1917	751,851	124,592	46,338
1918	294,703	136,832	34,669
1919	547,347	322,912	84,414
1920	643,985	322,464	76,145
1921	115,734	77,364	12,385
1922	131,028	131,658	31,673
1923	87,940	98,831	11,576

Notes.

1. Col. 1. The figures of manufacture are the net amounts of morphine manufactured for use as such, and do not include morphine manufactured for conversion into heroin, codeine, or other alkaloids.

2. Col. 2. The export figures for 1911 to 1920 are compiled from the Customs Returns and do *not* include exports by parcel post or exports of preparations containing the drugs. The figures for 1921-23 are compiled from the returns made to the Home Office and include both exports by parcel post and exports of preparations containing the drugs.

3. Col. 2. The export figures for 1914-17 do not include exports on Government account between August 4th, 1914, and June 30th, 1917.

4. Col. 3. Particulars of *exports* of heroin and its salts are not available before 1921.

Canada.

[From our Correspondent.]

Chairs of Medicine in Montreal.

Two important appointments in the Department of Medicine at McGill University, Montreal, have recently been made. Dr. Jonathan C. Meakins, a graduate of McGill, and since 1909 Christison Professor of Therapeutics and Clinical Medicine at Edinburgh, has been made Professor of Medicine and Director of the Department. Through the generosity of the Rockefeller Foundation a university clinic has been formed at the Royal Victoria Hospital, and Dr. Meakins is to be at its head. Dr. Campbell Howard, also a graduate of McGill, who since 1910 has occupied the chair of the theory and practice of medicine in the State University of Iowa, returns to his Alma Mater as Professor of Medicine, and has been appointed chief physician to the Montreal General Hospital. These two men have distinguished themselves as teachers and investigators, and have been warmly welcomed on their return to McGill University and to these two hospitals, in both of which clinical medicine is taught.

The Lister Memorial Club and Oration.

In 1922, at the Winnipeg meeting of the Canadian Medical Association, it was suggested that a Lister Memorial Club should be formed, and that at every third annual meeting of the Association there should be a Listerian Oration. On June 18th, 1924, at the annual meeting of the Canadian Medical Association, the first of these orations was delivered by Dr. John Stewart of Halifax, Nova Scotia. It was a worthy tribute of a worthy disciple to the life and achievement of his master. Lister showed to a remarkable degree the power of gaining and holding the affection of his students and assistants, and

is was made evident in Dr. Stewart's address by quotaons from Lister's letters reflecting the affection which isted between the teacher and student. The Association s wisely decided to issue this, the first, Listerian Oration a special number of its *Journal* shortly to be published. ll members will receive a copy gratis, and those in the Old ountry who desire copies may obtain them for a small sum. The other day, on turning to a copy of the menu of the Banquet offered to Lord Lister, P.R.S., by his former ouse-Surgeons, Clerks, and Dressers, 26 May, 1897," I as interested in noting the names and dates of Lister's anadian pupils. The late Dr. George A. Heron, who for ears practised as a physician in London, was born in the ttawa Valley, and was a dresser at Glasgow in 1863-64; he late Archibald E. Malloch of Hamilton, Ontario, was ister's house-surgeon at Glasgow in 1867-68; F. Lemaitre rassett of Toronto was his clerk in 1871 and house-surgeon 1874, after Lister had returned to Edinburgh; a "Harry ussell Canada" was house-surgeon in 1873-74; John tewart of Halifax, Nova Scotia, was dresser in 1875 and erk in 1876 at Edinburgh, and clerk in 1877-78 and housergeon in 1878 at King's College Hospital, London; St. George Baldwin of Toronto was house-surgeon at dinburgh in 1875-76.

Pacific North-West and Alberta Medical Associations.

A very successful meeting of the Pacific North-West edical Association was held at Vancouver from June 26th 28th, with a registered attendance of 589 medical men. nite a large number of those who gave addresses and apers had journeyed across the continent after attending e annual meeting of the Canadian Medical Association eld at Ottawa earlier in the month. Among these were r John Thomson-Walker and Dr. S. A. Kinnier Wilson of ondon; Dr. F. N. G. Starr, associate professor of clinical rgery, and Dr. George Sills Young, associate in medicine, oronto; John Tait, professor of physiology, Dr. Horst ertel, Strathcona professor of pathology, and Dr. W. W. hipman, professor of obstetrics and gynaecology at McGill niversity, Montreal; Dr. L. G. Rowntree, professor of edicine, Mayo Foundation for Medical Research; Dr. J. Austin, professor of clinical surgery, Queen's Univerty, Kingston, Ontario; Dr. Charles Hunter, associate rofessor, University of Manitoba, Winnipeg; and Dr. C. Routley, secretary of the Canadian Medical Associaon. The meeting was very happily timed for the visit of e Special Service Squadron of the British Navy, and lmost all the members of the association went over H.M.S. *ood* and other ships. Later on (July 2nd to 4th) many the visitors attended and read papers at the annual eeting of the Alberta Medical Association, held at dmonton; 175 persons registered, and a particularly easing feature was the number who came from the country istricts of the province.

Post-Graduate Course in Halifax.

Under the auspices of the medical faculty of Dalhousie niversity, a short post-graduate course was given in alifax during the first two weeks of September. The ornings were devoted to operations and clinics by members the local faculty, and in the afternoons Sir Henry Gray nd Drs. W. W. Chipman and L. J. Rhea of Montreal, Dr. D. Rudolf of Toronto, and Drs. Luther Mackenzie and oss Faulkner of New York each gave three lectures.

French-Canadian Medical Association.

The Association des Médecins François de l'Amerique du ord met at Quebec on September 10th to 12th. From rance came Professor Emile Sergent of the Faculté de édecine, his *chef de clinique* Dr. F. Bordet, and Dr. L. ibadeau-Dumas. The two former delivered a course of fteen lectures upon the fight against tuberculosis, the fferent forms, the laboratory and immunological aspects, nd the general and special methods of treatment of the isease. Dr. Ribadeau-Dumas gave ten lectures upon ediatrics. At the request of the Provincial Government ese foreign delegates repeated their lectures at the niversité de Montreal on September 22nd to 26th. At th Quebec and Montreal the lectures were cordially received and listened to with great attention. It may be remarked that French-Canadian medical men are going to Paris in larger numbers every year for post-graduate work.

Scotland.

Tribute to Sir Donald MacAlister.

An interesting ceremony took place in the Randolph Hall of the University of Glasgow, on October 24th, when two portraits and a bust of the Principal, Sir Donald MacAlister, Bt., M.D., were presented, in the presence of a large and representative gathering of town and gown, over which Sir Hector C. Cameron presided. One portrait, by Mr. George Henry, of Sir Donald in his robes as Vice-Chancellor was subscribed for by the University, a number of interested citizens, and the General Medical Council, of which Sir Donald is chairman. This was presented by Sir Hector Cameron to the University on behalf of the subscribers. He said their object in making the gift was twofold. First, they desired to continue the unbroken series of portraits of the Principals who had held office since 1803. In the second place they desired to pay tribute to Sir Donald for the great services he had rendered to the University since his advent amongst them seventeen years ago. The efficiency of the University had been greatly furthered by his wise administration and by his forceful influence; great additions had been made to the teaching staff, while buildings had been designed and erected for teaching and research. The Lord Provost of Glasgow, Mr. M. W. Montgomery, accepted the portrait on behalf of the University Court. Sir Thomas Paxton, Bt., presented the second portrait, a replica of that painted for the General Medical Council by Mr. Maurice Greiffenhagen, R.A., and a bust of Sir Donald in bronze by Mr. G. H. Paulin, A.R.S.A., to Lady MacAlister. He referred to the many services she had rendered to the community in a public capacity, and also as head of the social life of their University. Sir Donald MacAlister, in acknowledging the gifts on behalf of Lady MacAlister and himself, said that they could not do otherwise than recognize cordially that these were intended to hearten and encourage them in their afforts to do their duty worthily in the sphere to which they had been called. They would treasure the tribute in their hearts, not as a duly weighed and strictly measured appraisal of the past, but as a constant incentive for the future. He referred to the wonderful expansion of the resources of the University to meet the growing needs of education, and felt it was a great privilege to be allowed to help in its advance.

New Medical Ordinance for Edinburgh University.

At a meeting of the University Court of the University of Edinburgh last week it was reported that among a number of ordinances recently approved is one by which medical students, who have passed in some subjects of the first or second professional examinations at another university, may have these passes credited to them for the purpose of subsequent study at Edinburgh University. This will have the effect of enabling students, who have studied the preliminary part of their course at other medical schools, to come to Edinburgh, if they so desire, for the study of clinical subjects. Another ordinance recently approved provides for the superannuation and pensioning of principals and professors, and other ordinances relate to degrees in science in the subjects of forestry and engineering, and new regulations for the degree of bachelor of divinity. The University Court appointed Mr. William Arnot Fleming, M.A., LL.B., Advocate, as Secretary to the University in succession to Professor Wilson, resigned. Mr. Fleming will devote his whole time to the discharge of duties as Secretary to the University.

Dundee Deaf and Dumb Institution.

The annual meeting of the Dundee Institution for the Education of the Deaf and Dumb was held in the Old Town House on October 22nd, Sir George W. Baxter presiding. The financial report showed a balance of £160 18s. 6d. on the

year's work. In his report the headmaster, Mr. David Hensall, made an appeal for a larger institution; and other speakers in supporting this appeal described the wider degree of usefulness which could be attained in Dundee by an extension of the efforts on behalf of this class of afflicted persons.

SIR MALCOLM WATSON'S LECTURES IN GLASGOW.

Sir Malcolm Watson, M.D., LL.D., in the concluding lecture of the series on antimosquito work in the tropics, emphasized the great importance of a scientific knowledge of the mosquito and its habits. He described the different breeding places in which the various species of anopheles live, and showed that a method of control which gave a perfect result in one place might produce a disastrous outbreak of the disease in another. He described in detail the malaria control work in the Federated Malay States with which he had been primarily and particularly associated. This was begun in 1901 in the small town of Klang, where, by means of swamp drainage and jungle felling, malaria practically disappeared, with consequent great saving of human life. At the end of the same year a new port, Port Swettenham, was opened, but a severe outbreak of malaria threatened its closure. A thorough system of drainage cleared out both the mosquitos and the malaria. He described how in some areas the clearing of jungle caused the malaria to become even worse than before, and explained this by the appearance of a new species, *Anopheles maculatus*, in the clear running sunlit streams. These streams and springs had then to be oiled or drained by underground pipes, as was done in Singapore, with a resultant saving of 35,000 lives over a period of eleven years. Slides were shown illustrating the work done in Malaya, and also in Java, British Guiana, and India. In conclusion Sir Malcolm Watson emphasized the need for further research, which would doubtless lead directly to a reduction in the cost of measures for the control of the disease.

DOMESTIC WELFARE EXHIBITION IN GLASGOW.

The Domestic Welfare Exhibition in Kelvin Hall, Glasgow, continues to excite a great deal of interest. Various matters connected with the health and comfort of the population are demonstrated, and on October 21st deputations of housing committees from Glasgow, Cumnock, Perth, and Rutherglen Town Councils inspected the Atholl steel house, which is on exhibition, and which was described on page 740 of our issue of October 18th as a new departure in house construction.

England and Wales.

BIRMINGHAM: ST. LUKE'S DAY SERVICE.

ON Sunday, October 19th, the morrow of St. Luke's Day, a special morning service was held in the Parish Church of St. Martin's, Birmingham, to which, at the wish of the new Bishop (Dr. E. W. Barnes, F.R.S.), all the members of the medical profession in Birmingham were invited. Some two hundred medical men and women attended the service, which was conducted by the rector, Canon E. Grose Hodge, the lessons being read by Sir Gilbert Barling and Dr. H. Guy Dain. Tribute must be paid to the beautiful rendering of the musical part of the service. The Bishop delivered an address upon the text, "Honour a physician with the honour due unto him for the uses which ye may have of him: for the Lord hath created him. For of the Most High cometh healing" (Ecclesiasticus xxxviii, 1). After commenting on the combination in the text of true religious feeling and high regard for medical thought and skill, the Bishop traced the growth of rational medicine from its origin among the Ionian Greeks circa 600 B.C., and sketched the many vicissitudes through which it had passed. He remarked that the writer of the text had held the balance truly with regard to two aspects of human life which can never be in opposition without danger to both. "Man's spiritual and intellectual faculties must be conjoined if both are to reach perfection. Throughout the ages scientific medicine has had to fight against irrational fancies wh claim a religious sanction, and the warfare is not yet at end. But equally if medical practice ceases to be ethi and ignores the spiritual activities of the mind, it impe its own progress." He felt it was unnecessary to lay st on the therapeutic value of mental health, which, w spiritual serenity and confidence, were religious gifts despised by the wise physician. A family physician often a moral guide. In a modern community, more th any priest, he received confidences, and, without grant formal absolution, gave advice by which the patient mig win that self-control and newness of life which brou peace to the soul. After centuries of futile conflict right kind of harmony between scientific and religi thought was gradually being established. Progress being made towards a new joint scientific and religi interpretation of the nature and destiny of man wh would be, he believed, more coherent and more essentia Christian than the dogmatic schemes of the past. welcomed the new friendliness shown by men of scie towards the Christian religion, and the toleration scientific truth on the part of the clergy. He plead powerfully for close co-operation in connexion with soc problems, especially the propagation of the mental deficient, and maintained that the Church ought not bless an unhealthy union. In conclusion, the Bishop s that though some might feel that he had not sufficient emphasized his own faith in Christ, yet in pleading for unity of purpose common to the great profession of medici and the Christian Churches he was assuredly preachi Christ.

MANCHESTER: PRIZE FOR CANCER RESEARCH.

The Committee of the Christie Hospital, Manchester, offering a prize of £300 for cancer research. Candida must be qualified in medicine or in science cognate medicine, and must submit evidence of original resea work bearing on cancer done and projected which shall the opinion of the assessors qualify him for the prize. T object of the prize is to support research work already progress. The assessors will take into considerat promising work which might fail for want of financial he The successful candidate will be required to send resu of his work in a report ready for publication, or to giv lecture in Manchester. The prize will be awarded in instalments. The competition is open to research work of any nationality provided that all documents are su mitted in the English language. Applications must be s to the Chairman of the Medical Board, Christie Hospit Manchester, on or before December 31st, 1924. The decis of the assessors will be final, and they have power to div or withhold the prize as they think fit.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

The new department of electro-therapeutics and mass was formally opened by Lord Derby on October 24th. T cost of the building, £3,000, has been met by pub subscription, but the equipment has been given by S Alexander and Lady Bicket, generous donors to the hospit who provided over £900. A school of massage and medi gymnastics has been instituted, the first of its kind in a Liverpool hospital. The orthopaedic branch of surgery, e associated with Sir Robert Jones, has always been cultiva at the Royal Southern Hospital. Owing to the increase the number of patients Mr. Armour has become surgeon the department of orthopaedics, devoting his whole time this branch of surgery. The new building consists of thr rooms: one is to be used for massage and electrical trea ment; the second is devoted to medical gymnastics a various forms of apparatus in treating impaired movemen the third is set apart for various kinds of baths—spray a whirling systems, and melted paraffin wax baths are a instituted. Mr. H. Sutton Timmis, vice-president of t hospital, presided, and there were present, besides t honorary staff of the hospital, Sir Maurice Craig and S Dyce and Lady Duckworth, and many supporters and w wishers of the hospital. A pleasing event in the proceedi was the presentation by Lord Derby of prizes and certifica to the nurses who had passed the hospital examinations nursing.

Public Health in Cardiff.

At a meeting of the Cardiff Medical Society on October 15th Dr. R. M. F. Picken, medical officer of health for the city, gave an address on "Present-day Health Tendencies in Cardiff." After referring to the importance of the medical profession reviewing locally from time to time the results of public health activities, Dr. Picken emphasized the value of the statistical method of inquiry. The absence of reliable local statistics of sickness resulted in information in the mass being available only from death returns. The death rate in Cardiff since 1851 had fallen more rapidly than in England and Wales, and at the present time Cardiff was favourably placed in relation to the acute infectious diseases. So far as infant mortality was concerned there had been a satisfactory decline, shared in almost equal degree by all other towns of importance. Dr. Picken dealt at some length with the various explanations given for this decline; in his opinion the continuous fall in the birth rate was probably the most important factor. Examples were given of towns where there did not appear to be any definite correlation between a low birth rate and a low infant mortality, but in places like Bradford and Huddersfield this might be due to special circumstances affecting the employment of married women. The fact that the commencement of the fall in the birth rate preceded the decline of the infant mortality by twenty-five years was not necessarily an argument against the former being the result of the latter. The problem of tuberculosis was dealt with at some length, and it was shown that in Cardiff, unlike other cities, the death rate from pulmonary tuberculosis was actually increasing, more particularly among males. Various possible reasons for this were considered, and Dr. Picken showed that the cause could not be found in excessive unemployment as compared with other places, in the presence of a foreign seafaring population who admittedly suffered heavily from tuberculosis, or in the migration of the population in such a way as to increase the number of susceptible persons in the city. The problem remained unsolved. Having considered briefly the increase of cancer and the tendency for the male cancer mortality to approximate the female, Dr. Picken discussed some practical questions affecting the administration of public health and hospitals in Cardiff. He pleaded for better local sickness statistics and for greater use to be made of the general practitioner's opportunities for gathering and pooling information which might solve some of these problems.

A Medical Lord Mayor.

Dr. George Stevens Pope, who has been elected Lord Mayor of Norwich for the coming year, was educated in Manchester and Edinburgh, obtaining the diplomas L.R.C.P., L.R.C.S.Edin., and L.R.F.P.S.Glasg. in 1888. He specialized in mental science and held medical appointments at the London County Asylum, Cane Hill, and "The Retreat," York. He was formerly medical superintendent of Middlesbrough Asylum, and of the Somerset and Bath County Asylum, Wells. Since his appointment, some five years ago, to the post of medical superintendent of Heigham Hall, Norwich, Dr. Pope has taken an active part in the municipal and political life of the city. He is a past member of the Representative Body of the British Medical Association.

Ireland.

Royal Victoria Hospital, Belfast: Opening of Winter Session.

Professor W. W. D. Thomson, M.D., gave the opening address in the King Edward Memorial Hall of the hospital on October 16th. In the absence of the chairman (Mr. Mitchell), Mr. Kirk, senior member of the medical staff, occupied the chair. The lecturer made a sympathetic reference to the loss by death of three friends of the hospital during the year: Sir John Walton Browne, consulting surgeon, and the doyen of the profession in Ulster; Miss Riddel, a large benefactor; and Lord Pirrie, to whose genius and ever-ready counsel they owed so much, both in its erection, its equipment, and its improvement. A silent vote of condolence was passed by all present, standing, to be sent to their beloved president, Lady Pirrie. Professor Thomson regretted the loss of two of their senior physicians, Dr. Calwell and Dr. McKisack, by age limit, as members of the teaching staff and as active colleagues; but they would still have them as members of the consulting staff, and Dr. Calwell was carrying on the dermatological department for the winter. They gave a hearty welcome to the new members: Mr. Jefferson, assistant surgeon in the ophthalmological department; Mr. Hardy Greer, assistant surgeon in the gynaecological department; Dr. Smyth, in charge of the biochemical department; and Dr. Marshall and Dr. Turkington, the two new assistant physicians. An additional scholarship had been founded in surgery by the late Dr. Smith, Naas, County Kildare. The new wards and the new common room for students would soon be open, and would prove of great convenience and advantage. The old relation of student and teacher had greatly altered. They now recognized that they were all learners—the student was a junior learner, the teacher a senior, always willing to help his younger brother. The student should learn and practise on the normal—normal percussion, auscultation, and palpation—before he turned to the abnormal, and he should retain his chemistry and physics as well as his anatomy and physiology, and take them all with him into the wards and clinical laboratories. The second year hospital student should haunt the wards, and avail himself of every chance of getting familiar with all the technique required; he should go from ward to laboratory and *post-mortem* room, and then to his books, in a constant repetition. To master the art years of constant practice were required; graduation simply meant that the student could pursue his work without the immediate superintendence of his teacher. What were the prospects offered by the profession? The lecturer had followed up the careers of the students of his own year, which consisted of 57 men; of these 45 ultimately graduated, and 11 fell out, some to enter business, some from ill health, some from death, and some from worshipping at the shrine of Bacchus more than at that of Aesculapius. Of the 45, 11 were now dead, 4 of these due to causes originating in the war; of the 34 remaining, 8 were practising in Ireland, and the rest were scattered through England, Wales, and the Colonies, from the Windward Isles to Rhodesia; none were found in Scotland; 22 of the 34 were general practitioners, of whom 14 at least had excellent practices; 8 had entered the public services, asylum work, inspectorships; 3 were engaged in consulting work; 1 was a medical missionary. Professor Lindsay proposed a hearty vote of thanks to Dr. Thomson for his able, comprehensive, and stimulating address. Professor Sinclair seconded, and remarked on the great interest of the statistical table. This was conveyed by the chairman, and Dr. Thomson replied.

Local Government Bill, 1924 (Irish Free State).

A deputation from the Irish Medical Committee recently met the Minister of Local Government and Public Health and discussed with him the Local Government Bill with regard to its pension clauses as they affect medical officials in the medical services. Mr. McCarron, Secretary of the Ministry of Local Government, and Mr. Miley were with the Minister and took part in the discussion. The members of the deputation were Drs. J. M. Day, H. Raverty, P. J. Shanley, Mr. C. H. Gick, and Dr. T. Hennessy (Irish Medical Secretary). Sir James Craig, M.D., also attended and took part in the discussion; Dr. R. J. Rowlette was unable to be present as he was attending a meeting of the Committee of Inquiry in connexion with the Insurance Acts and medical services. The following is a brief summary of how medical officials will probably be affected if the Local Government Bill becomes law:

(1) Section 8 of the Local Government Act, 1919, with its mandatory provisions for pensions, will be allowed to stand for all existing medical officials who, within a prescribed time, which may be three or six months, select to come under this section for the purpose of their pensions. It is believed, however, that the basis for calculating the amount of pensions will be so altered so as to secure a more uniform standard.

(2) Added years for meritorious and professional services will remain optional with the local authorities, but, in the event of a refusal, there will be provided the right of appeal to the Minister.

(3) Pensions of medical officials, appointed after the passing of the Local Government Bill, will be as heretofore permissive, but in case of refusal by a local authority, or dispute as to the amount, the right of appeal to the Minister will be provided for.

It was pointed out on behalf of the Ministry that there is no mandatory provision for pensions for civil servants, and that the appeal to the Minister will place medical and other officials of local authorities on the same footing as civil servants with regard to pension rights. The Minister's attention was drawn to Section 32, which provides that where an officer has been granted an allowance in respect of his ceasing to hold his office, the local body shall, until such officer attains the age of 65 years, satisfy themselves, yearly or otherwise, that the incapacity continues, and, in the event of the incapacity ceasing before such officer has attained the age of 65 years, the local body may cancel such allowance and may require him to resume his office or any like office at a rate of salary and emoluments not less than the rate which he received before he ceased to hold such office. The deputation pointed out various reasons why this section would be impracticable, especially in the case of medical officials. In reply, the Minister stated he was not satisfied that the section would work satisfactorily in all cases and that he would either delete or modify it. In addition to the pension section other matters arising out of the bill were discussed, and the Minister promised to give them his consideration.

DISTRICT HOSPITAL APPOINTMENT.

Dr. O'Driscoll, Drimoleague, has been elected medical officer of Dunmanway District Hospital at a salary of £100 per annum. A deputation of the West Cork Medical Association appealed to Mr. Monahan, Commissioner at Clonakilty County Home, to have this sum increased to £150, but without result. The Commissioner said it was only a part-time occupation, and the duties would not entail more than an hour's attendance daily.

Correspondence.

THE "REAL" DEATH RATE.

SIR,—Dr. Dunlop raises some interesting questions. I am not sure that the general public does take the unstandardized death rate—that is, the ratio of deaths to mean population—as a fairly reliable measure of the health of a people, but I am quite sure that if it does the error involved is not greater but less than the error introduced by persuading it that some function of the so-called "expectation of life" is the "real" measure.

After all, the unstandardized death rate is a fact—at least, as near being a fact as any statistical constant can approach. It does tell us what proportion of the nation dies annually. The "expectation of life" is a fiction—a very useful fiction for certain specific purposes, but still a fiction. When the statistician says that the expectation of life at birth of males by English Life Table No. 7 is 48.5 years, he does *not* mean that English males living in 1901-10 were likely on the average to live 48.5 years apiece. What he means is that an imaginary population of males subjected from the cradle to the grave to the average rates of mortality at ages observed in 1901-10 would, on the average, live 48.5 years—a very different conception, because the death rates at ages are changing. Far from encouraging the general public to think in terms of expectation of life, we should try to confine the use of that very technical expression to professional circles.

It is, of course, impossible to condense the variable elements of a mortality rate into a single constant, just as it is impossible to get a quart into a pint pot. Those people who will not take the little trouble of studying the complete system of rates of mortality in fairly narrow age groups and demand some one figure must run the risk of error. On the whole, I think, they will make fewest mistakes by comparing the age-standardized ratios of mortality provided by the Registrar-General. These, like the Life Table constants, are fictions, but they are less readily misconceived because they do not involve the use of words, like expectation of life, used in one sense in popular speech and in another in technical jargon.

Even if the Life Table death rate were a safe constant for popular use, I do not think that Dr. Dunlop's short method of computing it is correct. If I understand him rightly, he thinks that 1,000 divided by half the sum of the birth rate and death rate (per unit of population) gives a close approximation to the expectation of life. This is true if the population is stationary in the Life Table sense, and involves a coefficient of regression of unity of birth rate upon death rate. Although there is a substantial correlation between birth rate and death rate in most secular comparisons, the regression is not unity. The mean birth and death rates (persons) of England and Wales for 1901-10 were 27.2 and 15.4 per 1,000 living, and Dr. Dunlop's method gives an expectation of life of 46.9 years. The English Life Table for this decennium gives 48.5 years for males and 52.4 for females; the difference is substantial. Dr. Brownlee published some years ago a much closer approximation to Life Table death rates, and I am afraid that no simple manipulation of the unstandardized rates will enable us to avoid relatively heavy arithmetical work.

A piece of educational work which is important is to impress upon the public that, given a falling birth rate, the unstandardized death rate, if the rates of mortality at ages remain constant or slacken in their rates of decrement, must increase. We have now well passed the point at which our age constitution is an optimum for a general rate of mortality. Dr. Dunlop is quite correct in holding that an increasing general death rate does not necessarily imply increasing rates of mortality at ages. This truth can be enforced without the desperate expedient of suggesting that poor approximations to a statistical fiction measure "real" death rates.—I am, etc.,

Loughton, Oct. 27th. MAJOR GREENWOOD.

TREATMENT OF EXOPHTHALMIC GOITRE WITH INSULIN.

SIR,—The interesting and valuable article by Dr. R. D. Lawrence in the JOURNAL of October 25th (p. 753) has stimulated me to make a few preliminary remarks on an investigation into the clinical pathology and treatment of exophthalmic goitre and "hyperthyroidism" in which I have been engaged for the past year, and of which I hope to give a full account later on.

My experience of the use of insulin in this connexion dates from mid-November, 1923, when, through the kindness of Professor Langmead, to whom also I am indebted for advocacy of the measure, I began my research on two of his patients in the Medical Unit wards of St. Mary's Hospital. Since then I have examined the effects of this remedy in nine cases—five as in-patients and four as out-patients; none of these appeared to be of the toxic adenoma class.

Insulin was employed because of its recognized antagonism, in many points, to the secretion of the thyroid. The procedure was to test thoroughly the effect of rest before giving insulin treatment. To ensure precision each patient was placed, from the outset, on a diet of which the carbohydrate, protein, and fat content was known. Besides the antagonism of the secretions referred to, two other considerations influenced my plan of investigation. First, the knowledge that the specific dynamic action of protein in heat production is very much greater than that of carbohydrate, fat occupying an intermediate position; and also that this dynamic action of protein is markedly increased in cases of hyperthyroidism, while carbohydrate yields only a relatively small increase, not far removed from the normal, due allowance being made for the severity of the condition. Secondly, I have found in cases of hyperthyroidism evidence of very varying degrees of utilization of carbohydrate—variations that are not at all parallel with the activity of the disease. For example, in one instance the blood sugar curve, starting from a normal or slightly supranormal level, may show (as it generally does in the majority) a considerable post-absorptive hyper-

glycaemia (care being taken to exclude the usual causes), while in another of equal or even much greater severity the curve is perfectly normal. Indeed, in one moderate case the consistently early return of the curve to the "fasting" level suggested hyperinsulinism, or at least storage powers greater than normal.

One aim, therefore, in treatment was to reduce the stimulating proteins of the diet to a minimum compatible with health, say, 1/2 gram per pound body-weight or less, and compensate for this by increasing considerably the carbohydrates, fats being allowed in rather subnormal amounts. The part played by the insulin injections was that of producing a normal metabolism of carbohydrates as judged by frequent blood sugar estimations. As expected, the ingestion of a large quantity of carbohydrate aggravated any defect of storage, or caused a departure from the normal, until the amount consumed was sufficiently covered by insulin. In this way, therefore, the stimulating effect of protein on an already accelerated metabolism may be reduced to a minimum.

Under the treatment all the patients benefited very appreciably, and some appeared to be restored to normal. It is difficult to be certain, but on the whole it seems to me that it is the cases with the diabetic type of blood sugar curve that respond best to insulin treatment when the hospital ordinary "full diet" is being given, whereas those with little or no defect of storage appear to behave more satisfactorily when special attention is directed to placing the burden of metabolism, so to speak, more on the pancreas and less on the thyroid. In my opinion optimum results are obtained when the blood sugar variations are maintained within, or perhaps a little under, normal limits, and not when the insulin effect is pushed further in the direction of "hypoglycaemia," with the view to producing still greater inhibition of thyroid activity.

I have been able to follow up the cases. In all except one the insulin has been discontinued (for periods up to nine months) in order to permit of observations of a different nature or for other reasons. In all these there has been a certain degree of return of symptoms, especially tachycardia, weakness, feeling of heat, and enlargement of the thyroid. One case retrogressed completely and has just been readmitted to hospital, but the remainder show evidence of lasting improvement, some considerably more than others; probably a better general hygiene inculcated during treatment largely accounts for any permanency of good results.

Space precludes the illustration of my remarks with case-notes, so I shall conclude by stating that the doses of insulin given ranged from 5 to 30 units twice daily and that all the symptoms were more or less ameliorated; the weakness, tachycardia, and swelling of the thyroid showed early and concurrent improvement, while the exophthalmos was the most resistant to treatment.—I am, etc.,

London, W., Oct. 27th. EDWIN G. B. CALVERT.

EPITHELIOMA OF SCROTUM IN COTTON-SPINNERS: IS THERE A PRECANCEROUS STAGE?

SIR,—Owing to the great importance of this condition among the mule-spinners employed in the cotton industry, the following case appears worthy of record. I am indebted to my chief at the infirmary, Dr. Douglas Gray, for permission to publish it.

A. B., aged 49, was admitted to Bolton Infirmary on September 17th, 1324. He has been a mule-spinner since 1897. He first noticed a small wart-like nodule on the scrotum five years ago. This only troubled him by itching. A clear fluid sometimes came from it: sometimes it broke down and ulcerated, but never healed—another wart-like projection again forming. His reason for attending our out-patient department was that one of his friends had just undergone an operation for scrotal cancer and had urged upon him the necessity of taking medical advice.

On examination there was a small wart on the scrotum with ulceration at the base. There was a slight hydrocele; no glands were palpable in the inguinal and femoral areas. On September 18th the ulcer was widely excised. The glands were not excised, as I was doubtful about the presence of malignancy and decided to wait for the pathological report. Dr. Rolland, pathologist to the Bolton Infirmary, reported on the specimen as follows: "This is a chronic inflammatory condition. There is an area of granulation tissue just under the epithelium which consists of new vessels, lymphocytes, and polymorphs. There is no evidence of tubercle nor of malignancy."

Nearly all the patients with scrotal cancer one meets with in Bolton give a very long history. They nearly all state that the condition has existed for many years. One of our recent cases was that of a man of 76, who had ceased work as a mule-spinner seven years previously.

It seems possible, therefore, that there may be a definite premalignant stage in these cases—in which the prognosis is good if the proper treatment of wide excision is adopted. From the very long duration of the condition in many of these cases it is doubtful if they are all primarily malignant.

If this supposition is correct the importance of warning mule-spinners of the possibility of the condition arising in the course of their employment, and the urgent necessity of seeking medical advice immediately, cannot be over-emphasized.—I am, etc.,

ANDREW COCHRANE, M.B., Ch.B.,
October 23rd. Honorary Assistant Surgeon, Bolton Infirmary.

CARBON MONOXIDE POISONING.

SIR,—Dr. Leonard Hill (BRITISH MEDICAL JOURNAL, October 18th, p. 743) agrees with me in one all-important contention, and that is, that poisons of an insidious nature are given off when certain fuel is burned—even more poisons than I mentioned. These children were not in heated, stagnant air at all; that can easily be inferred from what I wrote.

Carbon monoxide poisons in more ways than by the deprivation of oxygen: there is serious deterioration of the vitality of the red blood corpuscles and great alteration of the haemoglobin, with all the consequent effects on the nutrition, if exposure to this poison be prolonged and repeated.

The sensation in my head on entering the room, where there was a large amount of this deadly gas present, was due to shock in its presence. I have repeatedly noticed this, but never to the same extent. Being possessed of an idiosyncrasy in regard to the action of the gas, I can immediately tell when it is present, even in small quantities.

It should be noted that the experiments mentioned by Dr. Leonard Hill were performed on mice, and the conclusion does not necessarily apply to all human beings. Some persons' blood and nervous system are peculiarly and in a disastrous way affected by CO. There is more to remember, when considering the subtle effects of this poison, than its effect on the blood of mice.—I am, etc.,

Reston, Berwickshire, Oct. 18th. R. CUNNINGHAM AFFLECK.

ASSISTANTS IN GENERAL PRACTICE.

SIR,—I am glad to see the matter of assistants in general practice ventilated by your two correspondents "Ex-Assistant" and "H. W. B." I noticed an indoor assistantship advertised in the JOURNAL at £200 per annum.

May I call attention to one or two further abuses? First, the means by which some men obtain whole-time work for part-time salary, by living away from the surgery, or in some similar way, placing the assistant in such a position that he is practically compelled to do whole-time work. Then there are the "hospitality posts," which in the same way come to demand most of one's time. There is also the exploitation of medical women as unpaid whole-time assistants under the euphemistic pretext of "tuition," occasionally advertised in medical journals, and deliberately connived at by some of the medical agencies.

We are a profession, not a trade union, but surely we can put an end to these things. Surely, honest roadsweeping must seem preferable to tolerating a code of "ethics" so flabby and so dusky.—I am, etc.,

October 17th. MEMBER B.M.A.

SIR,—I think one ought to distinguish in this question, not between men and women, but between newly qualified persons and experienced ones. £350 intern is fair pay for a young doctor of some experience who knows how to handle patients, but equally £50 or £100 intern is enough for a newly qualified man or woman who has to be taught

all the routine, and wishes six or twelve months' practical work. The hospitals get interns for this, why not the general practitioner?—I am, etc.,

October 19th. W. D.

PETER LOWE'S "CHIRURGERIE."

Sir,—The note in your issue of October 18th is not only incorrect in regard to the number of copies of the first edition (1597) known, but also in respect of the rarity and date of the second edition, which is given as 1611. The proper date is 1612. The writer of the note also states that only two copies of the second edition are extant. This is very unlikely. I myself possess an imperfect copy, and am under the impression that a perfect specimen was offered for sale recently in one of the catalogues.

Finlayson, whose excellent *Account of the Life and Works of Maister Peter Lowe* may be consulted, says, "The second, third, and fourth editions of the *Chirurgerie* are by no means scarce." There is a copy, apparently perfect, of the fourth edition (1654) in the library of the Liverpool Medical Institute. The author just mentioned also writes: "An interesting peculiarity in the first edition is that, although fifteen years earlier, it is not in black letter as the second, third, and fourth editions are." It would be interesting to know whether this inverse sequence is unique, and how many books were printed in black letter so late as 1654.—I am, etc.,

Liverpool, Oct. 28th. W. Blair Bell.

Obituary.

NATHANIEL T. BREWIS, M.B., F.R.C.P.Edin., F.R.C.S.Edin.,

Consulting Gynaecologist, Edinburgh Royal Infirmary.

The death took place, on October 21st, at his residence in Drumsheugh Gardens, Edinburgh, at the age of 67, of Dr. N. T. Brewis, who for a period of years acted as gynaecologist to the Royal Infirmary of Edinburgh.

Nathaniel Thomas Brewis was the second son of the late Thomas Brewis of Eshott Hall, Northumberland. He was educated at Edinburgh Institution and at the University of Edinburgh, where he graduated in medicine in 1882. While a student Brewis attained great distinction as a Rugby football player, and he represented Scotland in international matches on no fewer than five occasions, at a later period being elected president of the Scottish Rugby Football Union. The club for which he played was that of the Edinburgh Institution. After graduation, he acted as house-surgeon to the Edinburgh Royal Infirmary and to the Glasgow Maternity Hospital.

At an early stage of professional life he devoted himself to the specialty of gynaecology, becoming obstetrician and gynaecologist to the Edinburgh New Town Dispensary and afterwards gynaecologist to Leith Hospital. He became a Fellow of the Royal College of Physicians of Edinburgh in 1887, and twelve years later a Fellow of the Royal College of Surgeons. His nursing home in Cambridge Street, Edinburgh, was well known all over Scotland for the valuable operative work which he carried out over a period of many years. His eminence in this department of professional activity was recognized by his election as president of the Edinburgh Obstetrical Society and by his appointment as examiner in gynaecology in Edinburgh University. On his retirement from the post of gynaecologist to the Royal Infirmary of Edinburgh in 1922 he was elected by the managers consulting gynaecologist. As a clinical lecturer his teaching was much appreciated by students, and he was possessed of a clear, quiet, and direct method of exposition. As a consultant his help was greatly sought and much valued by his professional colleagues, although it was for his great skill and successful results in operating that he was especially distinguished.

Dr. Brewis contributed several important publications to the medical press dealing with his specialty. Some of the best known of these were a textbook on the *Outlines of Gynaecological Diagnosis* and an article on "Uterine displacements" in the *Encyclopaedia Medica*. Other writings were a critical article dealing with his experience of laparotomy, which was embodied in a "Series of abdominal sections," contributed to the Edinburgh Obstetrical Society's *Transactions* in 1892; "Some renal cases," appearing in the same publication in 1904; "Cases of pregnancy complicated by fibroid tumours treated by hysterectomy," and "Six cases of vaginal Caesarean section," all contributed to the Obstetrical Society's *Transactions*.

In later life, when increasing years prevented his active participation in football matches, Dr. Brewis continued to take great interest in other forms of sport. He was a keen fisherman and golfer, and horseback riding formed his favourite method of exercise. He was twice married, first to Annie Eliza, eldest daughter of the late Mr. R. S. Douglas, Acton House, Northumberland, by whom he had one son and one daughter, who survive him. His second wife was Miss Lena McLean, to whom he was married in 1922, and by whom he is also survived. The interment took place at the Dean Cemetery, Edinburgh, on October 24th, and was attended by a very large number of representatives of the medical profession and of various Edinburgh bodies.

LOUISA ATKINS, M.D.

The death of Dr. Louisa Atkins, at the age of 82, took place in the seclusion of her retreat at Northwood, Middlesex; she was a pioneer in the cause of medicine as a profession for women. Her passing was characteristic; it was her wish that her death should not appear in the obituary columns of the papers, and so it came about that the event escaped the notice even of those among the circle of her intimate friends. This was not due to any indifference on her part to the feelings of her friends—far from it, she had the genius for friendship and held and was held by the firmest bonds of attachment; it was dictated by a proud humility which valued itself at small price and eschewed the ways of publicity.

Highly connected by birth, it was a spirit of independence which, as a young girl, caused her to leave her home. She went to India, and soon after her arrival was married to an officer, Colonel Atkins, many years her senior. Upon the death of her husband some two or three years later she was left to face life single-handed. Prizing independence before all things, she was led to take up medicine as a profession, and to this end studied at Zürich, and there, in 1872, graduated M.D. She had had a Continental upbringing, having been educated in France, and at that time the London School of Medicine for Women had not come into being, hence probably her selection of Zürich. Subsequently she took the Licence of the King's and Queen's Colleges of Physicians of Ireland, when in 1877 that body consented to examine women. The next important step in her career was her appointment as resident medical officer to the Birmingham Hospital for Women, where she did excellent work, and by reason of this and of her personality made valued friends, among them Mr. Arthur Chamberlain, brother of Joseph Chamberlain; this remained a life-long friendship. We find her next in London, elected on to the staff of the New Hospital for Women, since changed to the Elizabeth Garrett Anderson Hospital. She held this appointment for some years. Somewhere towards the latter end of the eighties she resigned her hospital appointment and soon after migrated from Hanwell, where she had till then resided, to Northwood, where she had had a house built for her. The writer cannot help feeling that a compelling factor in this withdrawal from official life must have been the spirit of the recluse which was strong within her. From Northwood and from her consulting rooms in London she continued her private practice. This work engaged her powers and absorbed her interest, to the great advantage of her patients' health (she was most successful in her practice) and to the acquisition of more than her share of devoted friends (she was much beloved). Henceforth it was her personality which struck the dominant note in her life's activities, informing her science and raising it to the level of an art—the art of medicine. This and her solitude at Northwood; and her garden, in particular her roses; and her books, for she had a keen literary taste—these sufficed.

Dr. Louisa Atkins was an earnest student, an able

physician, very human, very kind. She possessed an open mind, nimble in its workings; and if she suffered at times from depression, at other times she could be very gay, delighting her company by her lively sallies. She was quite fearless in the expression of her mind and in the practice of her principles, wheresoever these might lead. Essentially individual, she went her own way in quiet self-possession, thus living up to the motto of Paracelsus: "Be liegeman to thyself and to none other" (*non sit alterius qui suus esse potest*). Above all she was a great friend: she will not be forgotten by those who had the privilege of her friendship. H. S.

Dr. DUNCAN JOHN MACKENZIE died at his residence, Loch Maree House, Glossop, on October 12th. He was born in 1846, and received his medical education in Aberdeen University, where he graduated M.B., C.M. in 1872, and proceeded M.D. in 1874. After holding the post of assistant surgeon to Leith Hospital he commenced general practice in Glossop in 1874, and continued until his retirement in November, 1923. For twenty-two years he was also medical officer of health for the borough and rural district of Glossop, and for a few years the school medical officer. Dr. S. Kelly writes: Dr. Mackenzie was a great reader, maintaining to the last his interest in general and medical science and his study of the Latin and Greek classics. For forty-nine years in Glossop he lived a life of constant devotion to his professional and public work, and, apart from his reading, he took no other form of relaxation. Though by nature retiring, he was always ready to help in any public work or noble cause. As medical officer of health, and on various borough committees, he filled official positions with dignity and wisdom. His kindness and consideration for others endeared him to patients and fellow citizens, by whom he was esteemed not only for his medical skill, his wise advice in private and public affairs, his love of learning of all kinds, but also for his deeply religious character. He published many valuable papers, chiefly on public health subjects. He was a former chairman of the Lancashire and Cheshire Branch of the British Medical Association. His death is greatly regretted, and the funeral was attended by the local medical practitioners, including representatives of the British Medical Association, the Mayor and borough officials, and representatives of many public bodies. He leaves a widow, one son, who is in the medical profession, and two daughters.

Dr. JOHN JAMES MURPHY, who died on September 18th, at St. John's, Newfoundland, obtained the diplomas of M.R.C.S., L.R.C.P. in 1916, and from then until the end of the war he held a commission in the R.A.M.C. After demobilization he started practice in his native town of St. John's, Newfoundland, where he gained considerable reputation as a surgeon and gynaecologist. His colleague, Dr. Nutting Fraser, writes: Dr. Murphy's illness, which lasted a little over a week, was a particularly painful one. Stricken with ascending spinal paralysis, the muscles of respiration ceased work, and for a week he was kept alive by artificial respiration. Medical practitioners of St. John's responded nobly to the call, and for the eight days never ceased, one relieving another night and day, keeping up the respiration. He remained conscious throughout his illness, and was always deeply grateful to his brother practitioners for the attempts they were making to relieve him. Of a kindly, lovable disposition, Dr. Murphy had endeared himself to his colleagues and the community, as was evidenced by the expressions of sympathy, particularly at his funeral. He leaves a widow and three young children.

We regret to record the death, on October 19th, of Dr. JAMES THOMSON DICK, the recently appointed medical officer of health for Lanarkshire. Dr. Dick graduated with honours at Glasgow University in 1910, and two years later obtained the D.P.H. of Cambridge. He acted as resident officer in the Victoria Infirmary, the Royal Infirmary, and the Belvidere Fever Hospital of Glasgow, and thereafter filled the post of deputy medical officer of health for Birkenshaw. Since 1913 he had held the appointment of assistant medical officer of health for the county of Lanark, and discharged the duties of that responsible office with such acceptance that on the resignation of Dr. Wilson he was appointed to succeed him as medical officer of health. The appointment was made only ten days before his death, which was due to scarlet fever, doubtless contracted in the course of his professional work.

Dr. ARMITAGE MORTON died from pneumonia at Elland on October 7th, aged 47. He was the son of the late Mr. Joseph Morton, of Siddal, Halifax, and received his medical education at Leeds, where he graduated M.B., Ch.B. in 1905; he also took the degrees of M.B., Ch.B.Vict. four years later. After serving as house-physician and house-surgeon at the Leeds General Infirmary he practised at Burley Road, Leeds, but subsequently removed to Elland. During the war he served as captain R.A.M.C. with the expeditionary forces in Egypt and the East. Dr. Morton, who was a member of the Halifax Division of the British Medical Association, is survived by his widow and two children.

Mr. THOMAS ROBINSON, formerly a surgeon in Leeds, died at Bordighera, Italy, on October 9th. He was the son of Mr. John Robinson, and was born at Honley, near Huddersfield, in November, 1844. He was educated at Huddersfield College, and subsequently studied for the medical profession at the Leeds Medical School, taking the diploma of M.R.C.S.Eng. in 1867 and that of L.S.A. four years later. He became assistant to the late Mr. C. G. Wheelhouse, and on the latter's retirement set up practice for himself. For many years he was lecturer on osteology and also on anatomy at the Leeds Medical School, with which institution he was connected for nearly thirty years. Mr. Robinson retired from practice in 1914 and went to live at Bordighera; he had visited England on one or two occasions.

Lieut.-Colonel J. M. J. P. PELLETIER, Agent-General for Quebec in London, died at Ottawa on October 19th, aged 64, while on a visit to his daughter-in-law. He was educated at St. Anne's College and Laval University, Quebec, and took the degree of M.D. He practised in Sherbrooke, Quebec, and served as a lieutenant of the Students' Company of the 9th Quebec Battalion during the suppression of the Riel rebellion. He acted as coroner of the St. François district from 1890 to 1900, when he was returned to the Quebec Parliament as the representative for Sherbrooke County; in 1908 he was unanimously elected Speaker of the Legislative Assembly. In 1911 he was appointed Agent-General in London for the Province of Quebec.

Medico-Legal.

A LIBEL ACTION.

IN the King's Bench Division of the High Court of Justice, on October 27th, Mr. Justice McCardie gave judgement for the defendants in two actions brought by Miss Amy B. Hope, formerly a house-mother at the schools at Shirley, Surrey, controlled by the Bermondsey Guardians, claiming damages for alleged libel from Dr. John Brooke Ridley, of Croydon, the medical officer to the schools, from the Bermondsey Board of Guardians, and from Mr. Henry Herbert Reeve, the clerk to the guardians. The defendants pleaded privilege and justification, and also relied on the Public Authorities Protection Act, 1893.

The plaintiff, who appeared in person, said that while she was house-mother at the schools she was always in good health. Between January 1st and January 21st, 1919, however, Dr. Ridley reported to the Schools Committee of the Guardians that she was suffering from pulmonary tuberculosis, that his diagnosis had been confirmed by other medical men, and that it was not right for her to be with children. She was ordered to go to a sanatorium, but she refused, and she was thereupon dismissed on May 22nd, 1919.

Miss Hope called Dr. Price, senior physician at the Royal Northern Hospital, and Dr. Green, who formerly practised at South Norwood, both of whom stated that they had examined Miss Hope in January, in June, and in September, 1919, respectively, and had found no trace of pulmonary tuberculosis.

Without calling on the defendants, his Lordship held that there was no evidence of malice on the part of any of the defendants, that the pleas of privilege therefore succeeded, and that the action was barred by the Public Authorities Protection Act, 1893.

The Services.

DEATHS IN THE SERVICES.

Major-General Richard Henry Quill, C.B., Army Medical Service (retired), died at Cheltenham on October 18th, aged 76. He was born at Tralee, in June, 1848, the elder son of the late Jerome Quill, J.P., of Kilmorly, co. Kerry, and was educated at Trinity College, Dublin, where he graduated as M.B. and M.Ch. in 1871, and as M.D. in 1877. Entering the army as assistant surgeon in March, 1872, he reached the rank of colonel in March, 1902, and of surgeon-general in April, 1905, retiring in June, 1908. He served in the Afghan war of 1878-80, when he was with the Hurram Field Force, and took part in the Zaimukht expedition, and received the medal. He was employed during the recent war, and received the C.B. in 1917. As an administrative officer he served successively in the Thames district, at Chatham, in Ceylon, in the South-East district from 1902-5, and as P.M.O. of the Royal Victoria Hospital, Netley, from 1905 till his retirement in 1908. While in Ceylon he won the amateur golf championship of the island, and while holding the command at Netley he received the Prussian Order of the Red Eagle, 2nd class, in 1907. He leaves a widow and one son.

Lieut.-Colonel Gerald Stewart Mansfield, R.A.M.C. (ret.), died in Queen Alexandra's Military Hospital, Millbank, on September 27th, aged 57. He was born at Blandford, Dorset, on October 28th, 1867, the son of the late Rev. Joseph Mansfield, and was educated at Edinburgh, where he graduated as M.B. and C.M. in 1890. After filling the posts of house-surgeon of the Belgrave Hospital for Children and of senior house-surgeon of the London Temperance Hospital, he entered the army as surgeon-lieutenant on July 27th, 1892, becoming major after twelve years' service, and retiring on July 27th, 1912. After retirement he was employed at St. Peter's, Jersey. He served in the South African war in 1900-1, when he took part in the operations in the Orange Free State and in the Transvaal, including the actions at Houtnek, Thoba Mountain, and Wittebergen, and received the Queen's medal with four clasps. During the recent war he served as A.D.M.S. in the Home Forces, with the rank of lieutenant-colonel.

Universities and Colleges.

UNIVERSITY OF LONDON.

At a meeting of the Senate held on October 22nd a University Chair of Anatomy, tenable at the Middlesex Hospital Medical School, was instituted as the result of a munificent gift of £20,000 by Mr. S. A. Courtauld; the title of the chair will be "The S. A. Courtauld Chair of Anatomy," and Dr. Thomas Yeates, C.M., D.P.H., at present University Professor of Anatomy at the school, was appointed as the first occupant.

A course of four lectures on enzymes will be given by Professor John Mellanby, M.D., at St. Thomas's Hospital Medical School, Albert Embankment, S.E.1, on Thursdays, November 6th, 13th, 20th, and 27th, at 4.30 p.m.; admission free without ticket.

UNIVERSITY OF LEEDS.

The Council of the University of Leeds has appointed Dr. F. S. Fowweather to the Lectureship in Chemical Pathology recently instituted. Dr. Fowweather holds the M.Sc., M.B., and Ch.B. degrees of the University of Liverpool and the D.P.H. He has been in general practice in Ellesmere Port and has had chemical experience in industry.

NATIONAL UNIVERSITY OF IRELAND.

The following prizes and scholarships have been awarded: *Travelling Studentship in Anatomy.*—Joseph Paul. *The Dr. Henry Hutchinson Stewart Medical Scholarships.*—(*a*) Anatomy, (*b*) physiology: H. R. Cloin. *The Dr. and Mrs. W. A. Browne Gold Medal and Prize.*—Gold Medal: not awarded. Prize: John Bolton.

Mr. Michael G. O'Malley, M.B., B.Ch., F.R.C.S.Eng., has been appointed Professor of Surgery at University College, Cork.

The special final medical examination will be held in January, 1925, in Dublin, Cork, and Galway, provided that not less than 100 enter and pay the prescribed special entry fee on or before November 13th, 1924.

The Dr. Henry Hutchinson Stewart scholarships in arts, in medicine, and in mental and nervous diseases will be offered for competition in 1925.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have passed in the subjects indicated:

Surgery.—J. O. W. Bland, E. F. Hottinger, W. R. S. Jaecques, J. P. McGuire, A. J. Moody, C. M. Moody, W. E. Pennington, C. J. Rozario.

Medicine.—H. L. Bernstein, J. O. W. Bland, L. K. Htoe, R. D. Jones, K. Samaan, R. Schofield.

Forensic Medicine.—A. Kaplan.

Midwifery.—T. G. L. Davies, B. M. Francis, L. K. Htoe, P. B. P. Mellows, C. M. Moody, A. B. Osbourne, B. A. Perott, C. J. Rozario, K. Samaan.

The Diploma of the Society has been granted to Messrs. H. L. Bernstein, J. O. W. Bland, L. K. Htoe, W. R. S. Jaecques, R. D. Jones, W. E. Pennington, and R. Schofield.

Medical News.

The subject of the notification of puerperal sepsis will be discussed at a joint meeting of the Sections of Obstetrics and Gynaecology and of Epidemiology and State Medicine of the Royal Society of Medicine, together with the Society of Medical Officers of Health, to be held at 1, Wimpole Street, W.1, on Thursday next, November 6th, at 8 p.m. The meeting will be open to non-members engaged in practice who are interested in the subject.

A lecture on cancer of the rectum will be delivered at No. 1 Wimpole Street, at 5.30 p.m. on November 3rd, by Mr. W. Ernest Miles. A course in venereal disease will be held at the London Lock Hospital (Dean Street) from November 3rd to 29th. A month's course in dermatology at the St. John's Hospital for Diseases of the Skin begins also on November 3rd. Demonstrations will be given in the various departments. From November 10th to 22nd St. Mark's Hospital will hold a course in proctology. A course in gynaecology has been arranged by the Chelsea Hospital for Women from November 21st to December 6th. At the Royal Waterloo Hospital for Children and Women a four weeks' course in medicine, surgery, and gynaecology will begin on November 24th. Syllabuses of the courses may be obtained from the Secretary of the Fellowship of Medicine at Wimpole Street, W.1.

As already announced, the annual dinner of Fellows and members of sections of the Royal Society of Medicine will be held on Wednesday, November 26th, at 8 p.m., at the Hotel Victoria, Northumberland Avenue. We are asked to state that private guests, including ladies, may be invited, and that tables are to be arranged so as to accommodate parties of friends and guests.

The Röntgen Society will hold its meetings during the coming session on the first Tuesday in each month, at the British Institute of Radiology, 32, Welbeck Street. Dr. A. E. Barclay will deliver his presidential address at the first meeting (on November 4th, at 8.15 p.m.) on the subject of "The growth of radiology: has the Röntgen Society kept pace with it?"

The Tuberculosis Society commenced its meetings for the session 1924–25 on Friday, October 17th, with a discussion on cutaneous tuberculosis, introduced by Dr. W. J. O'Donovan. The next meeting, on November 21st, will deal with tuberculosis of the eye, the lecturer being Mr. Charles Goulden. Other subjects to be discussed subsequently include tuberculous peritonitis, tuberculosis and the central nervous system, pneumothorax, and pulmonary conditions simulating tuberculosis. The provincial meeting of the society will be held in April at Cambridge. The ordinary meetings of the society will be held in future at the house of the Society of Medical Officers of Health, 1, Upper Montague Street, Russell Square.

The King has granted Lieutenant-Colonel Benjamin Biggar, R.A.M.C., permission to wear the Insignia of the Third Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of services rendered.

The annual dinner of the Chelsea Clinical Society was held at the Café Royal on October 21st. The president, Dr. Gordon Lane, was supported by the presidents of the Royal Society of Medicine, the Medical Society of London, and the Hunterian Society, and the officer commanding the Military Hospital, Millbank. The toast of "Success and progress to the society" was proposed by Sir StClair Thomson, who maintained that every medical practitioner ought to join his local medical society, and cited Sir Clifford Allbutt's dictum that "practice not sweetened by service becomes a trade." The president, in responding, mentioned the gratifying fact that the membership of the society was now larger than ever before. The society had been originally founded for the benefit of general practitioners, who were the mainstay of medicine; in the coming session their requirements were receiving special attention, in that the meetings would deal with the prevalent diseases of the four periods of life. The November meeting would be devoted to childhood; the December one to adolescence, with especial reference to endocrine disturbances; the February meeting to the climacteric period; and the March meeting to diseases of old age. The January and April meetings would be clinical in nature, and in May the discussion would take the form of a summary of the work of the session, with especial reference to facultative diagnosis. The toast of "The Guests" was proposed by Dr. J. Campbell McClure, and Mr. H. W. Carson replied. The toast of "The President" was proposed by Dr. G. Crewdson Thomas, the late president; and Dr. Gordon Lane, in his reply, paid a warm tribute to the good work of Dr. P. S. Price and the other officers of the society.

THE KING has appointed Mr. Francis D. Donovan, L.D.S.R.C.S.Eng., to be Surgeon-Dentist to His Majesty's household.

ON November 13th Mr. Walter Spencer will give a lecture to the Guthrie Society of Westminster Hospital on Pliny's natural history and some anticipations of modern knowledge.

THE annual old students' dinner of St. Thomas's Hospital was held at the Princes' Restaurant on October 24th, with Dr. Seymour Taylor in the chair. Among those at the high table were the Hon. Sir Arthur Stanley, treasurer of the hospital; Sir Cuthbert Lockyer, dean of the medical school and senior surgeon; Sir Charles Sherrington, President of the Royal Society, and formerly lecturer on physiology in the medical school; Sir John Bland-Sutton, President of the Royal College of Surgeons; Surgeon Vice-Admiral J. Chambers, Medical Director-General R.N.; Lieut.-General Sir William Leishman, D.G. Army Medical Department; Sir Havelock Charles, late President of the Medical Board, India Office; Sir George Makins and Sir Charles Ballance, consulting surgeons, and Sir Hector Mackenzie, Sir Seymour Sharkey, and Dr. H. G. Turney, consulting physicians to the hospital. In proposing "St. Thomas's Hospital and medical school," the chairman said he was the senior St. Thomas's man present that evening (for he entered the hospital in 1869), and gave some interesting reminiscences of Simon, Croft, Bristowe, and other teachers of his student days. Sir Arthur Stanley, in his reply, told something of recent events at the hospital, and spoke in particular of the plans for the residential college and club, which, he said, were now within sight of realization. Sir Cuthbert Wallace, who also replied, gave an outline of the year's gains and losses. He mentioned, in particular, the deaths of Professor Shattock, Sir Archibald Reid, and Dr. Henry Gervis. He stated that the number of students on the register last year was 509, of whom 417 had entered for the full curriculum; 61 new full-time students had entered, of whom a good many were the sons of old St. Thomas's men. Both in work and play, and in the distinctions gained, the medical school was holding its own. In conclusion, the dean proposed the health of the chairman, whom he described as an honest and enthusiastic friend of the hospital. After Dr. Taylor's acknowledgement, Sir George Makins proposed the health of the visitors. St. Thomas's men, he said, were nothing if not hospitable, and all their guests were their friends. Sir John Bland-Sutton, in reply, expressed his pleasure at being admitted to this family gathering, and recalled many agreeable associations with St. Thomas's teachers.

NEW wards and an operating theatre have now been equipped at the Heritage Craft Schools at Chailey, in order that the necessary orthopaedic work amongst the cripple boys and girls in the institution may be carried out on the spot, and thus secure the continuity of treatment and education which has proved of such value in these cases.

THE KING has granted Mr. Arthur F. MacCallan, O.B.E., M.D., F.R.C.S., formerly Director of Ophthalmic Hospitals, Egyptian Department of Public Health, authority to wear the Insignia of the Second Class of the Order of the Nile, conferred upon him by the King of Egypt in recognition of valuable services rendered.

MR. C. W. DEAN, F.R.C.S.E., surgeon to the Royal Lancaster Infirmary, has been appointed honorary consulting surgeon to the County Mental Hospital, Lancaster.

THE Warren Triennial Prize is awarded for the best dissertation considered worthy of a premium, on some subject in physiology, surgery, or pathological anatomy, the arbitrators being the committee of the Massachusetts General Hospital, Boston. Theses submitted for competition in 1925 must be on some special subject in physiology, surgery, or pathology. They must be in English, French, or German, typewritten, and suitably bound, so as to be easily handled. Work published previously will not be considered. The name of the writer must be enclosed in a sealed envelope, on which is written a motto corresponding with one on the accompanying dissertation. The amount of the prize is $500. Dissertations will be received until April 15th, 1925. A high value will be placed on original work.

THE Congress of Natural Science and Medicine held at Innsbruck on September 24th, numbered 6,000 members. The next Congress will be held at Dusseldorf in 1926.

UNDER the name of "Journées médicales marocaines" a congress will be held at Casablanca and Rabat from December 26th to 29th, when the following papers will be read: Report on cancer in Morocco, by MM. De Rester, Pénard, and Speder; the fight against cancer, by Professor Bergonié; the surgery of cancer, by Professor J. L. Faure; report on amoebiasis in Morocco, by MM. Béros, Jobard, and Venderen; lecture on amoebiasis, by Professor Garin of Lyons; vaccine therapy and morbid anatomy of blastomycosis, by Major Velu.

PROFESSOR LUCATELLO of Padua, has been nominated successor of Professor Maragliano in the chair of internal medicine at Genoa.

THE Berlin Dermatological Society have elected Drs. Ehrmann of Vienna, Hoffmann of Bonn, Rasch of Copenhagen, Kreibisch of Prague, and Alkmkvist of Stockholm, as honorary members.

THE late Mr. George Heaton, consulting surgeon to the Birmingham General Hospital, has left estate proved at £57,959 gross, with net personalty £55,337. He bequeathed, among other legacies, £1,000 to the Birmingham General Hospital in trust for investment and to pay the income annually, one-half to the person whom the medical committee of the hospital shall decide to be the best resident medical officer of the hospital for the year, one-fourth to the sister or staff nurse whom the matron shall decide to be the best of the year, and one-fourth to the sister or staff nurse selected by vote of the whole of the sisters, nurses, and probationers of the hospital; £500 each to the Birmingham University, St. Dunstan's Hostel for Blinded Sailors and Soldiers, the Medical Institute, Birmingham, the Medical Benevolent Society, Birmingham, and the Birmingham and Midland Free Hospital for Sick Children. He directed that Mr. Frank Barnes and Mr. H. H. Sampson should have option of the purchase of any of his surgical instruments, drugs, appliances, and books, and that any not so selected should be divided equally between the Corbett Hospital, Stourbridge, and the Sutton Coldfield Cottage Hospital.

HOLLAND, which has a population of about seven millions, has 3,700 medical practitioners, 950 dentists, and 231 hospitals with about 30,000 beds. There are thirty-four communes with over 2,000 inhabitants in which no doctor is resident.

DR. ÉMILE ROUX and Dr. Louis Marten of the Institut Pasteur, Professor Roger, Dean of the Faculty of Medicine, Inspector-General H. Vincent, and Professors Achard, Carnot, Leguen, and Widal of Paris have been elected honorary foreign members of the Academy of Medicine of Rome.

AN Indian Science Congress will be held at Benares in January, 1925. The president-elect of the medical research section is Lieut.-Colonel F. P. Mackie, M.D., F.R.C.P., I.M.S., professor of pathology in the University of Calcutta.

DR. DOUGLAS W. A. BULL has been appointed a magistrate for Stony Stratford, Bucks.

THE senators recently nominated by the Italian Government included the ophthalmic surgeon, Dr. G. Cirincione of Rome, the surgeon, Professor D. Giordano of Venice, and Professor Luigi Simonetta of Perugia.

THE first Hispano-American Congress of Oto-rhino-laryngology will be held at Saragossa next April. Further information can be obtained from the general secretary, Dr. Bertrán, Fernando VI, N.10, Madrid.

THE twenty-ninth Congress of French-speaking Alienists and Neurologists will be held in Paris from May 25th to 28th, 1925, under the presidency of Dr. Arglade of Bordeaux, when the following subjects will be discussed: Late recovery from mental disease, by Dr. J. Robert, director of the Auch Asylum; familial infantile encephalopathies, by Dr. O. Crouzon, president of the Société de Neurologie; medical jurisprudence and states of mental enfeeblement, by Dr. Briand, principal physician of the Seine asylums.

THE trial of Dr. W. R. Hadwen on a charge of alleged manslaughter was opened at Gloucester Assizes on October 27th before Mr. Justice Lush. Dr. Hadwen, who stood committed on the coroner's indictment (on a majority verdict of the jury) and also by the city magistrates, pleaded "Not guilty" to the charge of unlawfully killing Nellie Burnham, aged 10, on August 10th last. Mr. C. F. Vachell, K.C., and Mr. StJ. Micklethwait appeared on behalf of the Director of Public Prosecutions, and Sir E. Marshall-Hall, K.C., and Mr. A. F. Clements for the defence. At the conclusion of the case for the prosecution, on October 28th, Dr. Hadwen went into the witness box. The jury, on October 29th, after a retirement of twenty minutes, found a verdict of *Not guilty*, and Dr. Hadwen was accordingly discharged. A report of the proceedings will appear in a later issue.

IN the general election results issued on Wednesday night the following medical candidates were successful: Dr. L. Haden Guest retains his seat for Southwark North, Sir Richard Luce has gained one of the two Derby seats, Dr. A. Salter has regained his former seat in Bermondsey, and Dr. T. Watts has regained his former seat in Manchester. Professor Thomas Sinclair has been returned unopposed for Queen's University, Belfast. Dr. C. Addison, Dr. Stella Churchill, Dr. R. Dunstan, Dr. O. Gleeson, Mr. Somerville Hastings, Dr. J. J. Lynch, Dr. R. O. Moon, and Dr. Joseph Robinson were unsuccessful.

Letters, Notes, and Answers.

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ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W.C.2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, W.C.2.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediocra Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 4361, Central).

QUERIES AND ANSWERS.

LIQUID PARAFFIN AND CANCER.

"B. K." asks if those who see many cases of malignant disease of the alimentary tract suspect that liquid paraffin taken internally for constipation is responsible for any increase in the occurrence of the disease. Liquid paraffin, he remarks, has now been used internally for some fourteen or fifteen years, and enormous amounts must be consumed annually.

ERYTHEMA NODOSUM.

MR. G. F. WALKER (General Infirmary, Leeds) invites practitioners who have met with cases of erythema nodosum in endemic or epidemic form, or examples of the infectious nature of this disease, to communicate with him.

INCOME TAX.

"T. A. D." inquires what is payable on the following: Investments £80, professional earnings £50, pension £42; expenses—purchase of second-hand car £34, servants 35s. per week including board, rent of house £50.

*** No information is given as to the proportion of the house used for professional purposes, but the calculation would work out somewhat as follows:

		£
Income:	Investments	80
	Pension (presumably earned)	42
	Earnings £50	
	Less servant £26	
	Less rent and rates £30	
	£56	
	nil	
		122
	Earned income allowance	4
		118

As the personal allowance is £135 no tax is payable.

Dispenser's Salary.

"L. B. C." employs a dispenser at £208 per annum. (*a*) Can she claim any deduction for the cost of her board and lodging, and (*b*) would it make any difference if, say, £50 of the amount were paid to her landlady?

*** (*a*) The answer is in the negative. Such expenses are primarily personal and are not incurred exclusively *in the performance* of the duties. (*b*) No. The leading case is Tennant *v.* Smith, in which the rule was laid down that emoluments are assessable to tax if they are received in money or in a form capable of conversion into money. We are of opinion that if £50 be paid to the dispenser's landlady in discharge or part discharge of a debt due by the dispenser, it forms part of the income of the latter for income tax purposes. If, however, "L. B. C." were to engage and pay for rooms himself and then permit his dispenser to live in them the matter would, however illogically, be put on a different footing, and the benefit of residing rent free in those rooms would not be income taxable in the dispenser's hands.

War Loan Interest.

"W. H." was for a few years in receipt of £285 interest on 5 per cent. War Loan. In April he converted it into 4½ per cent. War Loan, the interest on which is taxed by deduction, and has since received only £142 10s. untaxed instead of £285. The inspector of taxes, however, informs him that he is correctly assessed on the amount of the previous year's receipts and that the conversion does not affect the assessment for the current year.

*** Assuming that the whole of such untaxed interest-bearing loans were converted, "W. H." should point out to the inspector that there was, in fact, a "cessation" of the income during the year, with the result that the assessment for that year is reducible to the amount of the untaxed interest of the year of assessment.

LETTERS, NOTES, ETC.

"UNIVERSAL CURES, ANCIENT AND MODERN."

THE presidential address delivered by Professor A. J. Clark before the Therapeutic Section of the Royal Society of Medicine on October 14th, 1924, and printed in our issue of October 18th, p. 731, has brought us some correspondence more or less relevant to the main subject of Professor Clark's address. Among the letters received is one from Mr. A. E. Baines, who notes that his name was referred to in connexion with Abrams's theories. Mr. Baines wishes to state that he is in no way concerned with the soundness or otherwise of these theories; but he himself claims that he has a method of galvanometric diagnosis which is "an infallible method of detecting and locating disease," and, furthermore, is prepared to prove the same.

CANCER IN AFRICAN NATIVES.

WITH reference to the following passage in the letter from Dr. Old of Nyasaland, published on October 11th (p. 689):

> "Some causes that have been advanced, such as dietetic ones, have only a nutritional effect on embryonic cells that may predispose to growths"—

Dr. A. W. Crawford (Bolton) writes: I have frequently pointed out that unsuitable food constantly supplied to the lining membrane of the alimentary canal paralyses the powers of the epithelium, and therefore interferes with the nutrition of the embryonic cells which maintain all the tissues of the body, and thus weaken the epithelial supply, which I consider one of the main causes of cancer.

THYMOL FOR THREADWORMS.

IN reply to Dr. William Corbet (October 11th, p. 695), Dr. R. Gethen (Stanford-le-Hope) writes: He apparently doubts the veracity of my statements. The dose I prescribed was not an experiment, but what I have seen used quite commonly in the tropics (Calcutta). Again, Sir W. Hale-White, in his *Materia Medica*, recommends three successive doses of 30 grains each, with a little alcohol to facilitate the aqueous solution, as was also prescribed by me. I have never seen any untoward results. It certainly was an experiment when I tried it for threadworms, with a happy issue.

MEDICAL GOLFING SOCIETY.

THE autumn meeting of the Medical Golfing Society was held at Princes, Sandwich, on October 18th and 19th. Seventy members took part in the competitions, the whole meeting being a great success and most enjoyable. All competitions were played under handicap. The results were as follows:

Best Return v. Bogey (Cup presented by the President, Mr. Ernest Clarke).—First: T. P. Kolesar, C. Hott, and C. E. Finny—all square. Won on replay by T. P. Kolesar.

Foursomes v. Bogey (prizes presented by Dr. J. Grace).—The following couples tied for first place: E. Ravensworth Hart and H. W. Carson; H. D. Gillies and W. H. Lamplough. Won on replay by H. W. Carson and E. Ravensworth Hart.

The Canny Ryall Cup (Medal Play).—First, H. D. Gillies: 72 + 2 = 74. Second, G. S. Moriarty: 87 − 8 = 79. The fine score of Mr. Gillies constitutes an amateur record for the course, though perhaps not official.

HEALTHY PLAGUE CARRIERS.

IN the brief report of Dr. Andrew Balfour's recent address at the Anderson College of Medicine, Glasgow, printed in our Scottish column on October 25th (p. 783), he was stated to have referred to French work on healthy human and healthy cattle carriers of plague. The word "cattle" should read "rat." We hope to publish in an early issue a full abstract of Dr. Balfour's address.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 171.